

C.3 Biological Resources

Southern California Edison (SCE) is proposing to construct the Antelope Transmission Project (ATP) Segment 2 (Antelope-Vincent 500-kV transmission line) and Segment 3 (Antelope-Substation One 500-kV transmission line, Substation One, Substation Two, and 220-kV transmission line). Segment 1 (Antelope-Pardee) was addressed separately. This Project spans approximately 50 miles (80.5 km) and requires the placement of new towers, new roads to access these towers, and two new substations. Construction activities would span riparian areas and avoid other sensitive habitats. Portions of the proposed route go through desert, mountain, canyon, agricultural, and scattered residential areas.

C.3.1 Environmental Setting

C.3.1.1 Regional Project Area Description

The Project area transects portions of the City of Palmdale, the City of Lancaster, the Antelope Valley, and the Tehachapi Mountains. The City of Palmdale is situated at an elevation of 2,700 feet (823 m), and the City of Lancaster is situated at an elevation of approximately 2,400 feet (730 m); both are located in the Antelope Valley region of the western Mojave Desert. The Antelope Valley is an internally drained basin bordered by the San Gabriel and Tehachapi Mountains. Near the center of the Antelope Valley, the dry basins, or playas, of Rosamond and Rogers lakes form the dominant natural landscape feature. Historically, much of the area was cultivated with alfalfa and small grain crops before groundwater withdrawals were restricted in the 1950s due to a reduction in aquifer levels. However, extensive areas of undisturbed saltbush scrub (*Atriplex confertifolia* and *Atriplex polycarpa*) and Joshua tree (*Yucca brevifolia*) woodland habitats occur in areas where high soil salinity/alkalinity renders the land unsuitable for agriculture. Surface flows from the mountainous watersheds to the west and south move overland towards Rosamond Lake as sheet flow, or within natural or artificial channels.

The ATP extends from the Vincent Substation south of Highway 14 in Los Angeles County, California to north of Highway 58 in Kern County, California (Figure C.3-1; note: all figures are at the end of this section). Project activities would occur in the following United States Geological Survey (USGS) 7.5 Minute quadrangles: Tehachapi North, Tehachapi South, Monolith, Willow Springs, Little Buttes, Del Sur, Sleepy Valley, Lancaster West, Palmdale, Ritter Ridge, and Pacifico Mountain. For purposes of analyzing impacts to biological resources, the Project study area includes the centerline along the proposed and alternative transmission line routes and a buffer zone of one-half mile (0.8 km) on either side of the centerline (Figure C.3-2). Three blue-line creeks appear on USGS quadrangles within the study area including Amargosa Creek in the south, Oak Creek in the north, and an unnamed creek north of Oak Creek. USGS National Wetland Inventory (NWI) maps depict numerous, small polygons (0.3 to 1.0 acres [0.1 to 0.3 ha] in size) primarily described as palustrine, unconsolidated shore, temporarily flooded, and excavated. Several freshwater emergent or forested wetlands less than one acre in size occur within the northern portions of the proposed Project area.

This region receives an average of 4 to 9 inches (10 to 23 cm) of rainfall annually, and annual temperatures average 62 degrees Fahrenheit (°F) (17 degrees Celsius [°C]). During the survey of the proposed Project and alternatives, 73 soil types were identified. Of those, 39 soils identified as underlying the Project area (Table C.3-1) are predominantly sandy loams and sand, which are well drained to excessively drained (Natural Resources Conservation Service, 2002). Seven soil series are listed as containing alkaline soils: Cajon, Cinco, DeStazo, Garlock, Walong, Rosamond, and Sunrise. Of these, only the Sunrise, Cinco, DeStazo, and Garlock

soil series are considered to have moderately alkaline soils. These alkaline soils are found primarily in the central portion of the Project area, between Avenue A and Rosamond Boulevard, and in the northern portion of the Project area in the vicinity of the Tehachapi Wind Resource Area. Several special-status plant species, including the alkali mariposa lily are limited to specific soil types identified in Table C.3-1.

Soil Series	Series Soil pH	Drainage class
Adelanto	neutral	well-drained
Amargosa	neutral	well-drained
Anaheim Variant	neutral	well-drained
Anaverde	neutral	well-drained
Badland-Orthents	neutral	well-drained
Cajon	mild/moderately alkaline	excessively drained
Castaic	slightly acid	well-drained
Chino loam	neutral	poorly drained
Cinco	moderately alkaline	well-drained
DeStazo	moderately alkaline	well-drained
Dune land	neutral	excessively drained
Garlock	moderately alkaline	well-drained
Gaviota	neutral	well-drained
Godde	slightly acid	excessively drained
Greenfield	neutral	well-drained
Hanford	slightly acid	well-drained
Havala	neutral	well-drained
Hesperia	slightly acid	well-drained
Las Posas	slightly acid	well-drained
Mohave	neutral	well-drained
Pajuela-Whitewolf association	neutral	excessively drained
Psamments-Xerolls complex	neutral	excessively well-drained
Ramona	moderately acid	well-drained
Rock land	neutral	well-drained
Rock outcrop	neutral	well-drained
Rosamond	mildly alkaline	well-drained
Rough, broken land	neutral	well-drained
Steuber	neutral	well-drained
Sunrise	moderately alkaline	well-drained
Tehachapi	neutral	well-drained
Terrace escarpments	neutral	well-drained
Torriorthents	neutral	well-drained
Tujunga	slightly acid	excessively well-drained
Tunis	slightly acid	excessively
Vista	neutral	well-drained
Walong	mildly alkaline	well-drained
Wasioja	neutral	well-drained
Water	neutral	not applicable
Xerorthents	neutral	well-drained

C.3.2 Regulatory Framework

Federal and state endangered species legislation gives special status to a number of plant and animal species known to occur in the Project area. In addition, state resource agencies and professional organizations, whose lists are recognized by agencies when reviewing environmental documents, have identified as sensitive some species occurring in the Project area. Such species are referred to collectively as “species of special status” and include plants and animals listed, proposed for listing, or candidates for listing as threatened or endangered under the federal Endangered Species Act (ESA) or the California Endangered Species Act (CESA); animals listed as “fully protected” under the California Fish and Game Code; animals designated as “Species of Special Concern” by the California Department of Fish and Game (CDFG); and plants listed as rare or endangered by the California Native Plant Society (CNPS) in the *Inventory of Rare and Endangered Plants of California* (CNPS 2001).

C.3.2.1 Federal

Federal Endangered Species Acts provisions protect federally-listed threatened and endangered species and their habitats from unlawful take. Under the ESA, “take” is defined as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any of the specifically enumerated conduct.” The U.S. Fish & Wildlife Service’s (USFWS) regulations define harm to mean “an act which actually kills or injures wildlife.” Such an act “may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering” (50 CFR § 17.3). Activities that may result in “take” of individuals are regulated by the USFWS. The USFWS produced an updated list of candidate species May 11, 2005 (50 CFR Part 17). Candidate species are not afforded any legal protection under ESA; however, candidate species typically receive special attention from federal and state agencies during the environmental review process. Raptors (*e.g.*, eagles, hawks, and owls) and their nests are protected under both federal and state regulations. The federal Migratory Bird Treaty Act¹ (MBTA) prohibits killing, possessing, or trading in migratory birds except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs.

C.3.2.1.1 Regulated Habitats

Areas meeting the regulatory definition of “Waters of the U.S.” (jurisdictional waters) are subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE) under provisions of Section 404 of the Clean Water Act (1972) and Section 10 of the Rivers and Harbors Act (1899). These waters may include all waters used, or potentially used, for interstate commerce, including all waters subject to the ebb and flow of the tide, all interstate waters, all other waters (intrastate lakes, rivers, streams, mudflats, sandflats, playa lakes, natural ponds, etc.), all impoundments of waters otherwise defined as “Waters of the U.S.,” tributaries of waters otherwise defined as “Waters of the U.S.,” the territorial seas, and wetlands (termed Special Aquatic Sites) adjacent to “Waters of the U.S.” (33 CFR, Part 328, Section 328.3). Wetlands on non-agricultural lands are identified using the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory, 1987).

Construction activities within jurisdictional waters are regulated by the USACE. The placement of fill into such waters must comply with permit requirements of the USACE. No USACE permit would be effective in the absence of state water quality certification pursuant to Section 401 of the Clean Water Act. The State Water Resources Control Board is the state agency (together with the Regional Water Quality Control Boards) charged with implementing water quality certification in California.

¹ 16 U.S.C., Sec. 703, Supp. I, 1989.

C.3.2.2 State

Provisions of CESA protect state-listed threatened and endangered species. The CDFG regulates activities that may result in “take” of individuals (i.e., “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill”). Habitat degradation or modification is not expressly included in the definition of “take” under the California Fish and Game Code. Additionally, the California Fish and Game Code contains lists of vertebrate species designated as “fully protected” (California Fish & Game Code §§ 3511 [birds], 4700 [mammals], 5050 [reptiles and amphibians], 5515 [fish]). Such species may not be taken or possessed. The Fish and Game Code also includes a general take provision prohibiting the take of any bird, mammal, fish, reptile, or amphibian except as provided within other sections of the code or its regulations.

In addition to federal and state-listed species, the CDFG also has produced a list of Species of Special Concern to serve as a “watch list.” Species on this list are of limited distribution or the extent of their habitats has been reduced substantially, such that threat to their populations may be imminent. Species of Special Concern may receive special attention during environmental review, but they do not have statutory protection. USFWS also uses the label, “Species of Concern,” as an informal term that refers to those species that might be in need of concentrated conservation actions. Species of Concern receive no legal protection as a result of their designation, and the use of the term does not necessarily mean that the species would eventually be proposed for listing as a threatened or endangered species. However, most, if not all, of these species are currently protected by state and federal laws.

Birds of prey are protected in California under the State Fish and Game Code.² Section 3503.5 states it is “unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this Code or any regulation adopted pursuant thereto.” Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered “take” by the CDFG.

Vascular plants listed as rare or endangered by the CNPS, but which might not have designated status under state endangered species legislation, are defined as follows:

- List 1A - Plants considered by the CNPS to be extinct in California.
- List 1B - Plants rare, threatened, or endangered in California and elsewhere.
- List 2 - Plants rare, threatened, or endangered in California, but more numerous elsewhere.
- List 3 - Plants about which we need more information – a review list.
- List 4 - Plants of limited distribution – a watch list.

C.3.2.2.1 Regulated Habitats

The CDFG potentially extends the definition of stream to include “intermittent and ephemeral streams, rivers, creeks, dry washes, sloughs, blue-line streams (USGS), and watercourses with subsurface flows. Canals, aqueducts, irrigation ditches, and other means of water conveyance can also be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife” (CDFG, 1994a). Such areas within the Project area were determined using methodology described in *A Field Guide to Lake and Streambed Alteration Agreements, Sections 1600-1607* (CDFG, 1994a).

² Section 3503.5, 1992.

Activities that result in the diversion or obstruction of the natural flow of a stream, or which substantially change its bed, channel or bank, or which utilize any materials (including vegetation) from the streambed, may require that the project applicant enter into a Streambed Alteration Agreement with the CDFG.

C.3.2.3 Local Policies and Habitat Conservation Plans

C.3.2.3.1 Lancaster General Plan

The *City of Lancaster General Plan* (City of Lancaster, 1997) includes a policy and specific measures to reduce adverse impacts on biological resources and protect sensitive species. This policy is relevant to the dry riverbed/desert wash habitat and the Joshua tree woodland habitat within the Project area. The relevant policy and specific actions included in the City of Lancaster General Plan are as follows:

Policy/Specific Actions:

3.4.1: Provide for the development of comprehensive management programs for significant biological resource areas remaining in the area. Specific actions under this policy provide for cooperating with federal, state, and local agencies in developing the West Mojave multi-species habitat conservation plan and initiating area wide studies under this plan to identify sensitive plants and animals within the study area.

3.4.2: Provide for the general protection of areas designated as Prime Desert Woodland.

3.4.3: Preserve significant desert wash areas to protect sensitive species that utilize these habitat areas. As part of specific environmental review, evaluate natural desert wash habitats that could be impacted by development to determine their potential to support special-status plant and wildlife species. Areas of desert wash habitat considered to be highly important for special-status species, or that is occupied by these species, shall be protected.

10.2.2: Establish and acquire rights-of-way for master planned trails. Under policy specific action include pursuing agreements with public and private utilities for use and maintenance of utility corridors and rights-of-way for trail purposes.

14.5.2.11: Encourage the continued development of pipe and utility corridors and rail lines, while minimizing the impacts on adjacent land uses and the roadway network. Specific actions under this policy provide for the review of new development to ensure that easements for exiting pipes and utility lines are not compromised, and to encourage the undergrounding of utilities within street rights-of-way and transportation corridors. This policy also calls for a study analyzing the feasibility of creating additional spur access to appropriate industrial developments.

C.3.2.3.2 Palmdale Municipal Code

Joshua trees and juniper trees receive protection from the Palmdale Native Desert Vegetation Ordinance. Chapter 14.04 of the City of Palmdale Municipal Code requires a desert vegetation preservation plan with minimum preservation standards for removal of vegetation at sites with Joshua trees and other species included in the California Desert Native Plants Act, California Food and Agriculture Code, Division 23. This act requires permits from both Los Angeles and Kern counties for the removal of Joshua trees and other native vegetation. If on-site preservation is not feasible, in lieu, fees may fulfill this requirement. Conditions and measures anticipated to be included in the permit include, but are not limited to the following:

- A desert vegetation preservation plan prepared by a qualified biologist consisting of a written report and site plan depicting the location of each Joshua tree and, if determined necessary by the City of Palmdale, a long-term maintenance program for any Joshua trees left on site.
- Criteria for preservation of desert vegetation, the minimum standard for preservation being two Joshua trees per acre or as determined by the qualified biologist in accordance with the City of Palmdale. Joshua trees to be left on site shall be fenced off and left undisturbed during any grading activities or removed to a holding area until grading activities are completed. If two Joshua trees per acre cannot be preserved on site, the trees shall be transplanted to an off-site location by District No. 20 as approved by the City of Palmdale. Joshua trees may be transplanted to compensatory lands discussed in Measure 12-18. In lieu of transplantation of Joshua trees from areas to be developed, District No. 20 may satisfy the requirements of the City Code through payment of a fee to the City. At the City's discretion, compensatory mitigation for Joshua tree woodland included in Measure 12-18 may satisfy Measure 12-16 if the City determines that these lands support adequate numbers of Joshua trees (Sanitation Districts of Los Angeles County, 2005).
- Joshua trees preserved on site, in landscape easements, or landscape assessment districts are to be maintained in a healthy condition for a minimum of two growing seasons. The trees will be evaluated after one year by a qualified biologist. Trees determined to be failing or that have died will be replaced as determined by the City.

Implementation of the California Desert Native Plants Act, however, provides a specific exemption for utilities in carrying out public service. The Act does not apply to a public agency or publicly or privately owned public utility when acting in the performance of its obligation to provide service to the public. This exemption does not prevent a landowner from complying with any other federal, state, or local law or regulation.

The Palmdale Municipal Code also provides a limited exception to the provisions regarding the preservation of Joshua tree and desert vegetation in Chapter 14.04. Actions taken for the protection of existing electrical power or communication lines or other property of a public utility are exempt from the provisions of Chapter 14.04.

C.3.2.3.2 West Mojave Plan

The WMP is “a habitat conservation plan and federal land use plan amendment that (1) presents a comprehensive strategy to conserve and protect the desert tortoise, the Mohave ground squirrel (MGS) and nearly 100 other sensitive plants and animals and the natural communities of which they are part, and (2) provides a streamlined program for complying with the requirements of the California and federal Endangered Species Acts” (BLM, 2005). The 9,359,070-acre planning area includes 3,263,874 acres of BLM-administered public lands, 3,029,230 acres of private lands, and 102,168 acres of lands administered by the State of California within portions of Inyo, Kern, Los Angeles, and San Bernardino counties.

Implementation of the Habitat Conservation Plan (Proposed Action) as outlined in the West Mojave Plan would result in clarifying the California Desert Conservation Area (CDCA) guidelines and would provide new guidance for alternative use of designated utility corridors. The benefits and residual impacts of HCP implementation include the following:

- Utilities would ensure that protective measures, particularly regarding ravens, would be implemented along transmission lines occurring within Desert Wildlife Management Areas (DWMA).
- Issuance of USFWS salvage permits associated with the HCP would facilitate removal of offending ravens, and promote implementation of a raven management plan.
- HCP would ensure that maintenance workers of participating utilities are aware of desert tortoises, avoid them, and adhere to seasonal restrictions and alternatives identified in the HCP.
- HCP would require that all right-of-ways in DWMA be revegetated.
- The HCP would clarify that all new utility construction in BLM-designated utility corridors must minimize impacts, and alternative corridors used as recommended.

The BLM issued a Record of Decision (ROD) based upon the WMP EIR, but the ROD addressed only BLM's amendment of the California Desert Conservation Area (CDCA) Plan and did not include actions being proposed by State and local governments for the non-federal lands, except when specifically identified (BLM, 2006). The habitat conservation plan has not been completed and would require greater specificity for local governments to obtain incidental take permits under the State and federal endangered species acts (BLM, 2006).

C.3.3 Biotic Surveys

Reconnaissance-level field surveys of the Project area were conducted on June 5 through 9, and June 15 and 16, 2006. The purpose of these surveys was to document biotic resources within the Project area. Specifically, surveys were conducted to: (1) describe existing biotic habitats; (2) assess the Project area for its potential to support special-status species and their habitats; and (3) identify potential jurisdictional habitats, including Waters of the U.S., riparian habitat, and ordinance trees. Plant species observed within the Project area were identified and recorded (Appendix A). However, field surveys occurred following the known flowering – period of several special-status plant species. Therefore, some species occurring within the Project area may not have been observed during reconnaissance-level field surveys.

C.3.3.1 Biotic Habitats

Surveys for botanically sensitive habitats were conducted concurrently with special-status plant surveys. Ten biotic habitats occur within the Project area: agriculture, non-native annual grassland, desert scrub, saltbush scrub, creosote bush scrub, montane scrub, Mojave riparian forest, juniper woodland, Joshua Tree woodland, and desert wash (Table C.3-2, Figures C.3-3a and C.3-3b). Developed areas also occur throughout the Project area. These biotic habitats and associated vegetation and wildlife are described in further detail below. Plant communities were described in terms of dominant tree, shrub, and herbaceous vegetation composition and, wherever possible, classified according to the nomenclature of Holland (1986) and Sawyer and Keeler-Wolf (1995). Natural community designations described in the West Mojave Plan (BLM, 2005) were used to the maximum extent practicable to define and delineate habitats observed within the Project area. Adopting the designations identified in the Plan assisted in the identification of plant communities deemed important by agencies involved in that planning effort. Additionally, the WMP natural community designations provided a guideline for the scale or resolution for mapping habitats within the current study area suitable for analysis under this environmental document. It is important to note, therefore, that the scale used in this mapping effort could not account for small variation within each habitat type, or for the mosaic of plant associations evident in any natural, or, for that matter, disturbed plant community. For example, within a community described as creosote scrub, there are small inclusions of desert scrub and Joshua trees, but the size of these areas were below the minimum mapping units.

Biotic Habitat/Land Use Type	Area (ac)	Percent of Total
Agriculture	5.4	2.9%
Non-native Annual Grassland	17.1	9.2%
Desert Scrub	119.8	64.6%
Saltbush Scrub	7.4	4.0%
Creosote Bush Scrub	14.4	7.8%
Montane Scrub	2.7	1.5%
Mojave Riparian Forest	0	0%
Juniper Woodland	13.8	7.4%
Joshua Tree Woodland	3.4	1.8%
Desert Wash	0.4*	0.2%*
Developed	1.1	0.6%
Total	185.5	100%

* requires field verification

¹ Source: Southern California Edison Company (SCE). 2005. *Amended Proponent's Environmental Assessment, Antelope Transmission Project, Segments 2 and 3, Volume I*. Application No. 04-12-008 (filed December 9, 2004). September 30.

C.3.3.2 Biotic Habitats and Existing Facilities

C.3.3.2.1 Agriculture

Vegetation

Irrigated crops and disked fields are present in the valley portions of the Project area. The only crop observed during the survey period was alfalfa (*Medicago sativa*). Other agricultural areas were either bare soil being prepared for planting, or recently harvested alfalfa fields.

Wildlife

Agricultural lands of mixed fallow and planted alfalfa provide foraging and breeding habitat for populations of Botta's gophers (*Thomomys bottae*), voles (*Microtus* sp.), western harvest mice (*Reithrodontomys megalotis*), and house mice (*Mus musculus*). California ground squirrels (*Spermophilus beecheyi*) were observed within this habitat during reconnaissance-level surveys in June 2006. There is no suitable roosting habitat but some bats, such as the Mexican free-tailed bat (*Tadarida brasiliensis mexicana*) and the western mastiff bat (*Eumops perotis*), may forage over alfalfa fields in the Antelope Valley. Amphibian and reptile species observed in agriculture habitats during reconnaissance surveys included the Pacific tree frog (*Hyla regilla*), western fence lizard (*Sceloporus occidentalis*), and gopher snake (*Pituophis catenifer*). Within the range of the Project area, this habitat type may also support common reptile species including the side-blotched lizard (*Uta stansburiana*), common garter snakes (*Thamnophis sirtalis*), and red racer (*Masticophis flagellum piceus*). Up to 66 species of birds use agricultural fields in the Antelope Valley (Table C.3-3). Alfalfa fields are especially important as the primary foraging area for the locally nesting Swainson's hawks (*Buteo swainsoni*), a species listed as threatened by the CDFG. They may also serve as habitat for flocks of mountain plovers (*Charadrius montanus*) that regularly winter in the Antelope Valley. Raptors and other carnivorous species such as great blue heron (*Ardrea herodias*), northern harrier (*Circus cyaneus*), red-tailed hawk (*Buteo jamaicensis*), ferruginous hawk (*Buteo regalis*), golden eagle (*Aquila chrysaetos*), American kestrel (*Falco sparverius*), common barn-owl (*Tyto alba*), long-eared owl (*Asio otus*), burrowing owl (*Athene cunicularia*), common raven (*Lanius ludovicianus*), and loggerhead shrike (*Lanius ludovicianus*) regularly hunt for voles, insects, and other prey in these fields. Other common birds that forage on invertebrates and or seeds in agricultural fields

in the Antelope Valley include killdeer (*Charadrius vociferous*), horned lark (*Eremophila alpestris*), American pipit (*Anthus rubescens*), and savannah sparrow (*Passerculus sandwichensis*).

Table C.3-3. Bird Species Habitat Matrix

	Agriculture	Non-native Annual Grassland	Desert Scrub	Saltbush Scrub	Creosote Scrub	Montane Scrub	Riparian woodland	Juniper Woodland	Joshua Tree Woodland	Desert Wash	Developed
Non-breeding Visitors	63	54	37	36	34	51	46	35	28	38	54
Breeders	4	6	10	9	11	23	40	35	24	12	33
Total Species	67	60	47	45	45	74	86	70	52	50	87

¹ Sources:

Checklist of Birds for Edwards Airforce Base. [online]: <http://www.npwrc.usgs.gov/resource/birds/chekbird/r1/edwarair.htm>.

H. T. & Associates survey data. June 2006.

Lancaster Christmas Bird Count Data. [online]: <http://www.audubon.org/bird/cbc/>

CNDDDB. 2006. California Natural Diversity Data Base 2006. Rarefind. California Department of Fish and Game.

C.3.3.2.2 Non-native Annual Grassland

Vegetation

A large portion of the vacant, open lands present on the valley floor and the lower portions of the foothills are dominated by non-native annual grasses such as cheatgrass (*Bromus tectorum*), ripgut brome (*Bromus diandrus*), foxtail barley (*Hordeum jubatum*), wild oats (*Avena fatua*), and fescue (*Vulpia microstachys*). Within these non-native grasslands, ruderal species such as black mustard (*Brassica nigra*), Russian thistle (*Salsola tragus*), and curly dock (*Rumex crispus*) also occur. Anthropogenic disturbance is ubiquitous; debris piles, old appliances, and disturbance from off-road vehicle use are present. These areas are unsuitable for supporting most native species due to their highly disturbed soils and the dominance of non-native species. As a result, no special-status plants were observed, nor are they expected to occur, in non-native annual grasslands within the Project area.

Wildlife

Amphibian and reptile species observed in non-native annual grassland habitats during reconnaissance surveys included the Pacific tree frog, western toad (*Bufo boreas*) western fence lizard, gopher snake, western rattlesnake (*Crotalus viridis*), and common kingsnake (*Lampropeltis getula*). Within the range of the Project area, this habitat type may also support common reptile species including the side-blotched lizard, common garter snake, red racer, night snake (*Hypsiglena torquata*), racers (*Coluber constrictor*), long-nosed snake (*Rhinocheilus lecontei*), and western blind snake (*Leptotyphlops humilis*). Up to 60 species of birds use annual grasslands in the Antelope Valley (Table C.3-3). The few species of birds that nest in these grasslands, especially western meadowlark (*Sturnella neglecta*) and horned lark, are augmented during the winter by flocks of long-billed curlews (*Numenius americanus*), mountain bluebirds (*Sialia currucoides*), and a variety of sparrows including savannah (*Passerculus sandwichensis*), lark (*Chondestes grammacus*), white-crowned (*Zonotrichia leucophrys*) and vesper (*Pooecetes gramineus*). In summer, Western kingbirds (*Tyrannus verticalis*) are often found foraging on insects over grasslands. The raptors foraging in agricultural fields within the Project area would also forage in non-native annual grasslands. Non-native annual grasslands provide breeding and foraging habitat for several ubiquitous rodent species, such as the California ground squirrel and the house mouse, but also could support the Tehachapi pocket mouse (*Perognathus alticolus*).

inexpectatus) and Merriam's kangaroo rat (*Dipodomys merriami*). The openness of non-native annual grasslands as well as low food quality may limit this habitat for other diurnal species. During reconnaissance surveys, California ground squirrels were observed in this habitat. Common predators utilizing this habitat may include American badger (*Taxidea taxus*), kit fox (*Vulpes macrotis*), gray fox (*Urocyon cinereoargenteus*), and red-tailed hawk. Short grasses provide foraging opportunities for the pallid bat (*Antrozous pallidus*).

C.3.3.2.3 Desert Scrub

Vegetation

Desert scrub is a generic habitat term that describes several plant associations, but is generally characterized as a shrub dominated community on sandy soils with a minimal understory of herbaceous plants. In the southern portions of the Project area in the foothills near the Vincent substation and northern portions of the Project area in the vicinity of Highway 58, big sagebrush (*Artemisia tridentata*) dominates the desert scrub habitat within the foothill regions, intermixing with non-native grasses and ephemeral herbs. Many portions of this habitat exhibited evidence of recent burns, and many species adapted to disturbance are present. Within the Antelope Valley, rubber rabbitbrush (*Chrysothamnus nauseosus*) dominates the scrub habitat. Rabbitbrush generally occurs in disturbed areas. As with the non-native annual grassland habitat, unregulated dumping is prevalent in this habitat within the Project area. Because the level of disturbance is high within these desert scrub habitats within the Project area, whether from fire or from human disturbance, this habitat is less suitable for most special-status species, and no special-status species were observed in this habitat.

Wildlife

Reptile species observed in desert scrub habitats during reconnaissance surveys included the side-blotched lizard, long-nosed leopard lizard (*Gambelia wislizenii*), western whiptail (*Cnemidophorus tigris*), desert horned lizard (*Phrynosoma platyrhinos*), western zebra-tailed lizard (*Callisaurus draconoides*), and Mojave rattlesnake (*Crotalus scutulatus*). Within the range of the Project area, this habitat type may also support common reptile species including the glossy snake (*Arizona elegans*), California whipsnake (*Masticophis lateralis*), red racer, night snake, gopher snake, long-nosed snake, common kingsnake, and western blind snake. Up to 47 species of birds use desert scrub in the Antelope Valley (Table C.3-3). Birds utilizing this habitat include California quail (*Callipepla californica*), burrowing owl, lesser nighthawk (*Chordeiles acutipennis*), horned lark, loggerhead shrike, western meadowlark, sage sparrow (*Amphispiza belli canescens*), and migrant or wintering Brewer's (*Spizella breweri*), chipping (*Spizella passerina*), white-crowned, and Savannah sparrows. Desert scrub within the Project area frequently occurs in disturbed areas and would provide foraging and breeding habitat for ubiquitous species or species on the edge of neighboring habitats such as non-native annual grasslands. Small mammals observed in desert scrub habitat within the Project area include California ground squirrels, white-tailed antelope ground squirrels (*Ammospermophilus leucurus*), desert cottontails (*Sylvilagus audobonii*), and black-tailed jack rabbits (*Lepus californicus*). Nocturnal species such as desert pocket mouse (*Chaetodipus penicillatus*), southern grasshopper mouse (*Onychomys torridus*), Tulare grasshopper mouse (*Onychomys torridus tularensis*), chisel-toothed kangaroo rat (*Dipodomys microps*), and Merriam's kangaroo rat may also occur in this habitat, though none were observed in the survey period. The California myotis (*Myotis californicus*), big brown bat (*Eptesicus fuscus*), big free-tailed bat (*Nyctinomops macrotis*), Townsend's big-eared bat (*Corynorhinus townsendii*), pallid bat, and western pipistrelle (*Pipistrellus hesperus*) may forage in desert scrub abutting riparian forests.

C.3.3.2.4 Saltbush Scrub

Vegetation

Saltbush scrub habitat throughout the valley portion of the proposed Project consists of fine-textured, poorly drained soils with higher salinity or alkalinity than surrounding areas. Cattle saltbush (*Atriplex polycarpa*) and shadscale (*Atriplex confertifolia*) dominate these areas, but big sagebrush, bush seepweed (*Suaeda moquinii*), and rubber rabbitbrush also occur throughout the habitat. Large areas of bare ground occur throughout this habitat, and expansive soils are evident by the cracking of the soil crust where water temporarily ponded.

Wildlife

Reptile species observed in saltbush scrub habitats during reconnaissance surveys included the side-blotched lizard and western whiptail. Within the range of the Project area, this habitat type also supports common reptile species, including the long-nosed leopard lizard, glossy snake, California whipsnake, red racer, night snake, gopher snake, long-nosed snake, common kingsnake, western blind snake, and western zebra-tailed lizard. Up to 45 species of birds utilize this habitat (Table C.3-3). Saltbush scrub provides foraging and breeding habitat for several mammals including southern grasshopper mouse, Tulare grasshopper mouse, white-tailed antelope ground squirrel, chisel-toothed kangaroo rat, Merriam's kangaroo rat, desert kangaroo rat (*Dipodomys deserti*), desert pocket mouse, deer mouse (*Peromyscus maniculatus*), desert cottontail, American badger, and coyote (*Canis latrans*). White-tailed antelope ground squirrels and desert cottontails were observed in this habitat within the Project area during surveys in June 2006. Bats capable of foraging long distances from roosts (e.g., western mastiff bat, Mexican free-tailed bat) are expected to forage over saltbush scrub.

C.3.3.2.5 Creosote Bush Scrub

Vegetation

Creosote bush (*Larrea tridentata*) scrub occurs in large patches throughout the northern portion of the Project area. It intermixes with small areas of desert scrub; however, such small areas were not delineated as discrete habitats. Some Joshua trees also occur in this habitat, but not in densities high enough to be mapped as Joshua tree woodland habitat. Burro-weed (*Ambrosia dumosa*) co-occurs in this habitat, along with spiny senna (*Senna armata*), ephedra (*Ephedra nevadensis*), burrobrush (*Hymenoclea salsola*), and box thorn (*Lycium* sp.). Shrubs are widely spaced throughout, usually with bare ground, remnant herbs, and debris comprising interspaces. This habitat usually occurs on slopes and alluvial fans in the valley portion of the Project area.

Wildlife

Reptile species observed in creosote bush scrub habitats during reconnaissance surveys included the side-blotched lizard, long-nosed leopard lizard, western whiptail, desert horned lizard, and western zebra-tailed lizard. Within the range of the Project area, this habitat type may provide breeding and foraging habitat for common reptile species including the desert night lizard (*Xantusia vigilis*), desert iguana (*Dipsosaurus dorsalis*), glossy snake, common kingsnake, California whipsnake, red racer, night snake, gopher snake, long-nosed snake, western blind snake, spotted leaf-nosed snake (*Phyllorhynchus decurtatus*), western patch-nosed snake (*Salvadora hexalepis*), and lyre snake (*Trimorphodon biscutatus*). Up to 45 species of birds may use creosote scrub in the Project area (Table C.3-3). Several birds are primarily associated with creosote in the Project area including verdin (*Auriparus flaviceps*), LeConte's thrasher (*Toxostoma lecontei*), and black-throated sparrow (*Amphispiza bilineata*). California quail are common residents. Creosote bush scrub provides foraging and breeding habitat for many mammalian species including Mohave ground squirrel (*Spermophilus mohavensis*), pocket mouse (*Perognathus* ssp.), white-tailed antelope ground squirrel, Tulare grasshopper

mouse, desert kangaroo rat, Merriam's kangaroo rat, desert cottontail, desert woodrat (*Neotoma lepida*), and coyote. During daytime surveys of the Project area Mohave ground squirrel and white-tailed antelope ground squirrel were observed within this habitat. Nocturnal surveys of this habitat revealed presence of kangaroo rats, likely to be desert kangaroo rat, Merriam's kangaroo rat, and Panamint kangaroo rat (*Dipodomys panamintinus*). Nests of desert woodrats were also observed. Because of the availability of water in nearby Oak Creek, pallid bats, western pipistrelles, and California myotis may forage over this habitat. In the same area, the big free-tailed bat and spotted bat (*Euderma maculatum*) may forage over this habitat.

C.3.3.2.6 Montane Scrub

Vegetation

This inland, montane association supports chaparral and sage scrub, and is a transition community that occurs in the highest regions of the foothills, above the juniper habitat. It is found on dry, rocky slopes and is dominated by chamise (*Adenostoma fasciculatum*), big-berry manzanita (*Arctostaphylos glauca*), scrub oak (*Quercus berberidifolia*), and canyon live oak (*Quercus chrysolepis*). Occasional coffeeberry (*Rhamus californica* ssp. *californica*), deer brush (*Ceanothus integerrimus*), and desert gooseberry (*Ribes velutinum*) were also observed. Additionally, species present in other habitats, including big sagebrush, white mallow (*Eremalche exilis*), and buckwheat (*Eriogonum* sp.) also occur. Two mariposa lily species were found within this habitat, plain mariposa lily (*Calochortus invenustus*) and Palmer's mariposa lily (*Calochortus palmeri*).

Wildlife

Reptile species observed in montane scrub habitats during reconnaissance surveys of the Project area included the side-blotched lizard, western whiptail, and gopher snake. Within the range of the Project area, montane scrub habitats may also provide breeding and foraging habitat for common reptile species, including the sagebrush lizard (*Sceloporus graciosus*), western rattlesnake, gopher snake, common kingsnake, southern alligator lizard (*Elgaria multicarinata*), western blind snake, and night snake. Up to 74 species of birds use montane scrub in the project vicinity (Table C.3-3). Several birds are restricted to this habitat in the Project area including California thrasher (*Toxostoma redivivum*), wrentit (*Chamaea fasciata*), California towhee (*Pipilo crissalis*), rufous-crowned sparrow (*Aimophila ruficeps*), and Bell's sage sparrow (*Amphispiza belli*). More widespread birds that inhabit montane scrub include common poorwill (*Phalaenoptilus nuttallii*), Anna's hummingbird (*Calypte anna*), Bewick's wren (*Thryomanes bewickii*), lazuli bunting (*Passerina amoena*), spotted towhee (*Pipilo maculatus*), lark sparrow, and lesser goldfinch (*Carduelis psaltria*). Montane scrub provides foraging and breeding habitat for several mammals including the brush mouse (*Peromyscus boylii*), deer mouse, Tehachapi pocket mouse, desert cottontail, mule deer (*Odocoileus hemionus*), and the brush rabbit (*Sylvilagus bachmani*). Only desert cottontails were observed in this habitat during surveys of the Project area.

Mammalian predators likely to occur in this habitat are coyote, gray fox, bobcat (*Lynx rufus*), and mountain lion (*Puma concolor*). Several bats use this area for foraging habitat, including the California myotis, western mastiff bat, Mexican free-tailed bat, big brown bat, and Townsend's big-eared bat. The pallid bat and western pipistrelle may forage in scrub abutting riparian areas.

C.3.3.2.7 Mojave Riparian Forest

Vegetation

Two riparian areas within the Project area contained flowing water at the time of the field survey, Amargosa Creek in the south and Oak Creek in the north. One unnamed creek north of Oak Creek within the wind farm area was not accessible and therefore not surveyed. Numerous small, unnamed drainages that support

occasional riparian species occur throughout the southern foothill region of the Project area. Riparian vegetation included arroyo willow (*Salix lasiolepis*), sandbar willow (*Salix exigua*), Pacific willow (*Salix lucida* ssp. *lasiadra*), cottonwood (*Populus fremontii*), white alder (*Alnus rhombifolia*), western sycamore (*Platanus racemosa*), mulefat (*Baccharis salicifolia*), white mallow, desert baccharis (*Baccharis sergiloides*), valley oak (*Quercus lobata*), and cattail (*Typha angustifolia*). Additionally, saltcedar (*Tamarix ramosissima*) has invaded some areas.

Wildlife

Amphibians and reptile species observed in Mojave riparian forest habitats during reconnaissance surveys included the Pacific treefrog, western toad, side-blotched lizard, western whiptail, common kingsnake, and gopher snake. Within the range of the Project area, Mojave riparian forest habitats may also provide breeding and foraging habitat for common amphibian and reptile species, including the bullfrog (*Rana catesbeiana*), Gilbert skink (*Eumeces gilberti*), common garter snake, western rattlesnake, gopher snake, southern alligator lizard, western blind snake, and night snake. Up to 85 common species of birds may inhabit riparian woodland in the project vicinity (Table C.3-3). Although the riparian forest patches in the Project area are fairly small, many migratory birds use these desert riparian areas as stopover habitat to refuel and rest. These include flycatchers, warblers, vireos, thrushes, tanagers, and grosbeaks. A few rare avian species may potentially breed in riparian areas within the Antelope Valley region. These include the yellow-billed cuckoo (*Coccyzus americanus*), vermilion flycatcher (*Pyrocephalus rubinus*), Southwestern willow flycatcher (*Empidonax traillii extimus*), least bell's vireo (*Vireo bellii*), yellow-breasted chat (*Icteria virens*), and summer tanager (*Piranga rubra*). Common birds that breed in this habitat include Bewick's Wren, house Wren (*Troglodytes aedon*), bushtit (*Psaltiriparus minimus*), Bullock's oriole (*Icterus bullockii*), black-headed grosbeak (*Pheucticus melanocephalus*), and orange-crowned warbler (*Vermivora celata*). Mojave riparian forest provides foraging and breeding habitat for voles (*Micrptus* sp.), ornate shrew (*Sorex ornatus*), brush mouse, southern grasshopper mouse, Tulare grasshopper mouse, and desert cottontail. Predators such as the long-tailed weasel (*Mustela frenata*), ringtail (*Basariscus astutas*), coyote, bobcat, and mountain lion are likely to be attracted to the wooded riparian habitats and surrounding habitats due to the abundance of prey and water. One bobcat and several coyotes were observed in the hills in the riparian habitat in the southern portion of the Project area near Pine Creek. Migrant bats such as the western red bat (*Lasiurus blossevilli*) and the hoary bat (*Lasiurus cinereus*) may occur in riparian areas in the spring and early fall. Year round residents, such as the yuma myotis (*Myotis yumanensis*), small-footed myotis (*Myotis ciliolabrum*), spotted bat, and California myotis will forage in the riparian forest and surrounding juniper woodland while the pallid bat and the western pipistrelle forage in the riparian forest and surrounding oak savanna and scrubland.

C.3.3.2.8 Juniper Woodland

Vegetation

Juniper woodland is an open habitat dominated by juniper (*Juniperus californica*) with an understory of big sagebrush, California buckwheat (*Eriogonum fasciculatum*), Mormon tea (*Ephedra viridis*), and Mojave yucca (*Yucca schidigera*). Jimson weed (*Datura stramonium*) and wooly marigold (*Baileya pleniradiata*), among other species, occurred sporadically throughout this habitat. Areas of non-native grassland, sagebrush scrub, and montane scrub intergrade with this habitat. Juniper woodland occurs primarily in the southern portions of the study area (Vincent substation to the Ritter Ranch planned development), although remnant habitat occurs in the northern Tehachapi Mountains as well.

Wildlife

Reptile species observed in juniper woodland habitats during reconnaissance surveys included the western whiptail and western rattlesnake. Within the range of the Project area, juniper woodland habitats may also provide breeding and foraging habitat for common reptile species, including the sagebrush lizard, side-blotched lizard, Gilbert skink, gopher snake, common kingsnake, southern alligator lizard, western blind snake, night snake, racer, red racer, and California whipsnake. Up to 70 species of birds use juniper woodland in the project vicinity (Table C.3-3). This woodland attracts species such as Western scrub-jay (*Aphelocoma californica*), Northern mockingbird (*Mimus polyglottos*), American robin (*Turdus migratorius*), phainopepla (*Phainopepla nitens*), Scott's oriole (*Icterus parisorum*), black-headed grosbeak, and house finch (*Carpodacus mexicanus*). Juniper woodland provides breeding and foraging habitat for many mammals, such as the Panamint kangaroo rat, canyon mouse (*Peromyscus crinitus*), long-tail pocket mouse (*Chaetodipus formosus*), pinyon mouse (*Peromyscus truei*), Tehachapi pocket mouse, desert cottontail, and mule deer. Common mammalian predators utilizing this habitat include coyote, gray fox, bobcat, and mountain lion. In areas abutting riparian forest the yuma myotis, small-footed myotis, big brown bat, Townsend's big-eared bat, big free-tailed bat, spotted bat, and the California myotis may be found foraging in this area. No mammals were observed in this habitat during surveys of the Project area.

C.3.3.2.9 Joshua Tree Woodland

Vegetation

Joshua tree (*Yucca brevifolia*) woodland is primarily open, supporting little understory during most of the year, and intergrades with creosote bush scrub. While Joshua trees occur sporadically throughout the creosote scrub habitat, areas were mapped as Joshua tree woodland only when densities were high. Other common species include California buckwheat, beavertail cactus (*Opuntia basilaris*), cholla (*Opuntia echinocarpa*), Great Basin sagebrush, bladder sage (*Salazaria mexicana*), woolly marigold, and cheat grass. The main growing season is spring, with many species of ephemeral herbs germinating after rainfall.

The CDFG considers Joshua tree woodland to be a threatened habitat within California. It is endemic to the Mojave and northwest Sonoran deserts and is adapted to harsh desert conditions, requiring high light, well-drained soils, and limited precipitation. Joshua trees exhibit slow growth rates; new seedlings may grow an average of 3 inches (8 cm) annually for the first 10 years, then growth slows to 1.5 inches (1.3 cm) per year thereafter (USFS, 2006). The trunk of a Joshua tree consists of thousands of small fibers and lacks annual growth rings, making it difficult to determine the tree's age, though it is estimated to grow for up to 200 years. The Joshua tree is considered to be very susceptible to disturbance and intolerant of soil compaction. This may partially be due to its shallow root area and top-heavy branch system. The tallest trees reach about 40 feet (12 m) tall. The most significant area of Joshua tree woodland within the Project area is located south of Oak Creek Road, near the proposed Substation One.

Wildlife

Reptile species observed in Joshua tree woodland habitats during reconnaissance surveys included the side-blotched lizard, long-nosed leopard lizard, desert night lizard, and western whiptail. Within the range of the Project area, Joshua tree woodland habitats may also provide breeding and foraging habitat for common reptile species, including the sagebrush lizard, gopher snake, common kingsnake, western blind snake, night snake, red racer, California whipsnake, and western rattlesnake. Up to 52 species of birds inhabit Joshua tree woodland in the Antelope Valley (Table C.3-3). Many of the bird species that inhabit creosote scrub are also found in Joshua tree woodland. The presence of Joshua trees provides suitable nesting substrate for red-tailed

hawk, American kestrel, ladder-backed woodpecker (*Picoides scalaris*), loggerhead shrike, Bewick's Wren, cactus wren (*Campylorhynchus brunneicapillus*), Northern mockingbird, Bendire's thrasher (*Toxostoma bendirei*), and Scott's oriole. Characteristic creosote desert species, verdin and black-throated Sparrow, are most abundant in this habitat. The high quality Joshua tree woodland in the Project area provides foraging and breeding habitat for the Mohave ground squirrel, cactus mouse (*Peromyscus eremicus*), Tehachapi pocket mouse, canyon mouse, white-tailed antelope ground squirrel, desert kangaroo rat, Merriam's kangaroo rat, desert cottontail, coyote, and badger. Bat species found foraging over creosote scrub would also forage over Joshua tree woodland.

C.3.3.2.10 Desert Wash

Vegetation

Desert wash habitats are prevalent throughout the Project area and were too numerous to map although their tentative distribution is shown on Figures C.3-3a and C.3-3b as desert wash, drainages, and creeks. The largest of these features, Oak Creek, traverses the Project area in the north and contained little vegetation due to scouring that occurs after rainstorm events. Sparse buckwheat, sagebrush, and rabbitbrush occur within these drainage channels. Generally, the desert washes are narrow and incised, with eroded banks and gravel and may vary in size from a foot deep (0.3 m) and 3 feet (1 m) across to several feet deep and more than 20 feet (7 m) across.

Wildlife

Reptile species observed in desert wash habitats during reconnaissance surveys included the side-blotched lizard, long-nosed leopard lizard, western whiptail, desert horned lizard, and western zebra-tailed lizard. Within the range of the Project area, this habitat type may provide breeding and foraging habitat for common reptile species, including the desert iguana, glossy snake, common kingsnake, California whipsnake, red racer, night snake, gopher snake, long-nosed snake, western blind snake, spotted leaf-nosed snake, and Mojave rattlesnake. Up to 50 species of birds may occur in the desert wash habitat (Table C.3-3). Examples of birds found in adjacent habitats that may visit desert wash include California quail, white-crowned sparrow, Brewer's blackbird (*Euphagus cyanocephalus*), and house finch. Desert wash habitat within the Project area will be traversed by wildlife species using adjacent creosote and Joshua tree habitats. Some small mammals, such as desert pocket mice and southern grasshopper mice, construct burrows in desert washes.

C.3.3.2.11 Developed

Vegetation

Many areas of paved or compacted gravel roads occur throughout the Project area. Additionally, many homes with associated infrastructure and planted, ornamental plant species occur throughout the Project area. To the extent feasible, private property was visually surveyed from adjacent public rights-of-way. Developed areas also include roadsides planted with non-native tree species such as eucalyptus (*Eucalyptus* sp.) and tamarisk (*Tamarix tetandra*).

Wildlife

Paved and developed areas can be used as a transit way for ubiquitous wildlife such as California ground squirrels, desert cottontail, black-tailed jackrabbits, night snakes, Pacific tree frogs, western toads, southern alligator lizards, desert iguanas, zebra-tailed lizards, glossy snakes, California whipsnakes, night snakes, long-nosed snakes, spotted leaf-nosed snakes, and Mojave rattlesnakes. Reptile species observed on roadways

habitats during reconnaissance surveys included the side-blotched lizard, long-nosed leopard lizard, western whiptail, desert horned lizard, common kingsnake, gopher snake, red racer, and western rattlesnake. Up to 86 species of birds use planted trees and ornamental shrubs in the Antelope Valley (Table C.3-3). The planted ornamental trees near houses and along roads provide important nesting and roosting substrate for a wide variety of birds including Swainson's Hawk, red-tailed hawk, great horned owl (*Bubo virginianus*), long-eared owl, American crow (*Corvus brachyrhynchos*), Western kingbird, Northern mockingbird, loggerhead shrike, house finch, and lesser goldfinch. These plantings are also important for migratory birds as stopover habitat for foraging and resting. Some structures may provide day and night roosting habitat for the pallid bat and the Mexican free-tailed bat.

C.3.4 Special-Status Plant and Wildlife Species

C.3.4.1 Special-Status Plant Species

Reconnaissance-level surveys were conducted on June 5 through 9, and June 15 and 16, 2006, for habitats capable of supporting special-status plant species. Prior to the surveys, information concerning the known distribution of threatened, endangered, or other special-status plant species with potential to occur in the area was collected from several sources and reviewed. The sources included the biological resource section the Proponents Environmental Assessment (PEA), the CDFG's Natural Diversity Database (CNDDDB, 2005) and information available through the USFWS, CDFG, and technical publications. The CNPS's *Inventory of Rare and Endangered Vascular Plants of California* (CNPS, 2001) and *The Jepson Manual* (Hickman, 1993) supplied information regarding the distribution and habitats of vascular plants in the vicinity.

A query of special-status (including state- and federally-listed) plants in the CNDDDB was first performed for the eleven USGS 7.5 minute quadrangles that contain the Project area. The CNPS Inventory was then queried to produce a similar list for Los Angeles and Kern counties. CNPS records listed 276 special-status plant species as occurring in Los Angeles and Kern counties (22 species occurred in both counties). The following specific habitats were then used to query the CNPS inventory: chenopod scrub, Mojave Desert scrub, valley and foothill grasslands, riparian scrub, pinyon and juniper woodland, and Joshua tree woodland. These habitats were chosen based on the similarity of their constituent species to those occurring within the Project area. The habitat requirements of each special-status plant species were the principal criteria used for inclusion in the list of species potentially occurring within the Project area. The CNPS records listed 199 special-status species as occurring in Los Angeles and Kern counties within our specified habitats. Elevation requirements for each species were then used to further clarify the list of special-status plant species that could occur within the Project area.

Many of the special-status plant species that occur in Los Angeles and Kern counties are associated with habitat types that do not occur within the Project area, such as playa and cismontane woodland. CNDDDB records indicate sixteen special-status species as occurring within 5 miles (8 km) of the Project area. These include:

- alkali mariposa lily (*Calochortus striatus*),
- slender mariposa lily (*Calochortus clavatus* var. *gracilis*),
- Palmer's mariposa lily (*Calochortus palmeri* var. *palmeri*),
- sagebrush loeflingia (*Loeflingia squarrosa* var. *artemisiarum*),
- Red Rock poppy (*Eschscholzia minutiflora* ssp. *twisselmannii*),
- Parry's spineflower (scientific name),
- Lancaster milk-vetch (*Astragalus preussii* var. *laxiflorus*),
- round-leaved filaree (*Erodium macrophyllum*),
- Greata's aster (*Aster greatae*),
- short-joint beavertail (*Opuntia basilaris* var. *brachyclada*),

- white-bracted spineflower (*Chorizanthe xanti* var. *leucotheca*),
- San Fernando Valley spineflower (*Chorizanthe parryi* var. *Fernandina*),
- Baja navarretia (*Navarretia peninsularis*),
- Coulter's goldfields (*Lasthenia glabrata*),
- pale-yellow layia (*Layia heterotricha*), and
- golden violet (*Viola aurea*).

CNPS records indicate 136 species associated with the habitats and elevation ranges occurring within the Project area. Of these, 60 species are considered to be CNPS List 4, which are species of limited distribution (a watch list). A majority of these CNPS List 4 species were rejected from further analysis due to their regional abundance. Furthermore, since the publication of the CNPS lists, many of these species have been delisted. Therefore, these species were considered, but rejected for consideration in this document (Appendix B). The remaining species were divided as follows: 70 CNPS List 1B species, four CNPS List 2 species, and two CNPS List 3 species. Plants listed as threatened or endangered by California or the federal government are not expected to be present in the proposed Project area.

Each species listed in CNDDDB or CNPS records was analyzed for rarity. For plants judged as being unlikely to occur within the Project area, no further assessment was undertaken, as potential impacts to these species would not occur as a result of the proposed Project. Of all species originally considered, ten were identified as potentially occurring in the project vicinity: alkali mariposa lily, club-haired mariposa lily (*Calochortus clavatus* var. *clavatus*), Palmer's mariposa lily, Plummer's mariposa lily (*Calochortus plummerae*), Peirson's morning-glory (*Calystegia peirsonii*), short-joint beavertail, San Gabriel Oak (*Quercus durata* var. *gabrielensis*), white-bracted spineflower, San Gabriel bedstraw (*Galium grande*), and golden violet. Their potential to occur within the Project area is summarized in Table C.3-4 and expanded descriptions for each species is provided below. The remaining CNPS and CNDDDB species were rejected from consideration due to degraded habitat within the Project area, the lack of associated native species, and/or the absence of specific microhabitat variables such as soil type, elevation, or hydrology (Appendix B). Impacts to State or federally protected plants are not expected to occur.

C.3.4.1.1 Species Accounts

Alkali Mariposa Lily (*Calochortus striatus*) Federal Listing Status: None; State Listing Status: None; CNPS Status: List 1B.

Alkali mariposa lily is a rare, bulbiferous perennial associated with moist, alkaline soils of the southern San Joaquin Valley, far western Mojave Desert, and inland parts of southern California. It is also found in Nevada (Ash Meadows and formerly Las Vegas). Like all members of the genus *Calochortus*, alkali mariposa lilies appear in the late winter as long, narrow, grass-like leaves from a small, scaly, deep-seated corm (Hickman, 1993). An umbel-like inflorescence, 3.94 to 19.69 inches (10 to 50 cm) in height, arises in spring, and distinctive, purple-veined flowers are produced from April through June. It is limited to saline or alkaline soils, found near alkali sinks and playas, in floodplains, and springs in desert lowlands, often where saltgrass (*Distichlis spicata*) meadows are characteristic. Known records from the vicinity of Lancaster (e.g., Amargosa Creek floodplain area) and Rosamond on the Los Angeles-Kern County line occur east of the Project area.

Lily populations in the Lancaster area are associated with areas where surface water runoff to Rosamond Lake collects and persists over clay soils that retain moisture longer than sandy soils. Alkali mariposa lilies typically occur on moist shallow-sand drifts or low-stabilized dunes around the perimeter of barren-clay pans. This "dune and pan" microtopography is associated with Sunrise, Pond, Oban, Tray, and Rosamond loam soils within and around Edwards Air Force Base. All known occurrences of alkali mariposa lily are found on these soils within the Lancaster area (H. T. Harvey & Associates, 2004).

The alkali mariposa lily was not documented within the Project area during field surveys conducted in 2001 through 2005 (SCE, 2005). Because mariposa lily populations can go without flowering in years with unfavorable climate and growing conditions, alkali mariposa lily is judged to have moderate potential for occurrence within the Project area even though it was not documented during field surveys. Although much of the formerly suitable habitat for the species within the Project area on the floor of the Antelope Valley has been developed for either agricultural or rural residential uses, its occurrence in the Project area cannot be ruled out. Several sites near the existing Monolith Substation in Segment 3 have seasonally moist heavy-clay soils dominated by rabbitbrush and are similar to described habitat for this species, further supporting its potential occurrence. This species has a moderate probability of occurrence in the area of Segments 2 and 3 where suitable habitat conditions, as described above, exist.

Slender Mariposa Lily (*Calochortus clavatus* var. *gracilis*) Federal Listing Status: None; State Listing Status: None; CNPS List: 1B.

Slender mariposa lily is an uncommon bulb-forming herb limited to the Transverse Ranges of California, occurring only within Los Angeles County. Ownbey (1940), Fiedler and Ness (1993), and Fiedler and Zebell (2002) list the species as occurring only in the San Gabriel Mountains, but the specimens cited by Ownbey were in the Castaic Range west of Segment 2. Slender mariposa lily is found in habitat that is described generally as coastal sage scrub or a mixed scrub. Field surveys near the wind energy facilities (Segment 3) failed to locate the species. However, the closely related species, club hair mariposa lily (*Calochortus clavatus* var. *pallidus*), was located scattered along sections of Segments 2 and 3. Because mariposa lilies can remain dormant and not flower for years, slender mariposa lily is judged to have moderate potential for occurrence along the Segment 2 transmission line proposed and alternative routes.

Palmer's Mariposa Lily (*Calochortus palmeri* var. *palmeri*) Federal Listing Status: None; State Listing Status: None; CNPS List: 1B.

Palmer's mariposa lily is an uncommon bulb-forming herb limited to the southerly mountains of west-central and south-central California. CNPS (2001) considers Palmer's mariposa lily to be "declining rapidly: occurs in wet meadows where seriously threatened by grazing." Its habitat is generally described as moist, but not saturated, portions of montane meadows, as occurs in some areas of Segment 2 and the northern reaches of Segment 3.

A small population of Mariposa lily, tentatively identified as Palmer's, was observed within the Project area. Because mariposa lilies only flower in years of favorable climate and growing conditions, Palmer's mariposa lily is judged to have moderate potential for occurrence within the Project area. The areas with the highest probability of occurrence are on the northernmost portions of Segment 3, between proposed Substations One and Two, and on Segment 2.

Plummer's Mariposa Lily (*Calochortus plummerae*) Federal Listing Status: None; State Listing Status: None; CNPS List: 1B.

Plummer's mariposa lily is an uncommon bulb-forming herb limited to the Transverse Ranges of southern California. CNPS (2001) considers it to be "significantly reduced by development, and [it] continues to decline". Its habitat is generally described as rocky shallow soils, often on decomposed granitic deposits, within chaparral, woodland, or open forest communities.

Plummer's mariposa lily was not documented in the Project area during field surveys conducted in 2001 through 2005 (SCE, 2005). Because mariposa lilies can go without flowering in years with unfavorable

climate and growing conditions, there is a moderate probability of occurrence in the area of Segment 2 where suitable habitat conditions exist.

San Gabriel Bedstraw (*Galium grande*). Federal Listing: None; State Listing: None; CNPS Status: List 1B.

San Gabriel bedstraw is a tufted perennial herb restricted to the Transverse Ranges of southern California, documented only from Los Angeles County. It typically occurs in open chaparral, oak woodland, or similar woodland communities including stands of Big Cone Fir (*Pseudotsuga macrocarpa*), generally at high elevations (approximately 3,000 to 6,000 feet [914 to 1,828 m]). CNPS (2001) lists urbanization and associated impacts as primary threats, but also invokes mining, horticultural collecting, grazing, and off-road vehicles as secondary concerns. A sizable proportion of the approximately 30 known occurrences are on Angeles National Forest lands, where Species Management Guidelines (Soza *et al.*, 2002) are in use. No occurrences of San Gabriel bedstraw were documented during field surveys in this region (SCE, 2005), although the presence of dense chaparral prior to the fires of 2002 would make detecting the species more difficult. This species has a low probability of occurrence in the area of Segment 2.

Short-joint Beavertail (*Opuntia basilaris* var. *brachyclada*). Federal Status: None; State Status: None; CNPS Status: List 1B.

Short-joint beavertail is a cactus restricted to the Transverse Ranges of southern California, documented only from Los Angeles and San Bernardino counties. The species typically occurs in open chaparral, juniper woodland, or similar woodland communities, but not at high elevations. CNPS (2001) lists urbanization and associated impacts as primary threats, but also invokes mining, horticultural collecting, grazing, and off-road vehicles as secondary concerns. A sizable proportion of the approximately 60 known occurrences are on Angeles National Forest lands, where Species Management Guidelines are being applied.

This species is known to occur at three locations along the alignment of Segment 2, and suitable habitat exists along the entire length of Segment 2. Field surveys conducted in dense chaparral prior to the fires of 2002 (SCE, 2005) did not detect short-joint beavertail, but the species is difficult to detect in dense vegetation. At one location, plants were located only where a previous fire (circa 2000) made them more visible due to the absence of surrounding vegetation and substantial regrowth. For this reason, short-joint beavertail may occur along other project alignments in the region.

Pierson's Morning-glory (*Calystegia peirsonii*). Federal Status: None; State Status: None; CNPS Status: List 4.

Pierson's morning-glory is on the CNPS watch list, but its distribution is limited to Los Angeles County in chaparral, chenopod scrub, cismontane woodland, coastal scrub, lower montane coniferous forest, and valley and foothill grassland habitats at elevations of approximately 100 to 4,900 feet (30 to 1,500 m). It is a perennial, rhizomatous herb that blooms from May to June. CNPS records state that it is primarily threatened by grazing. This species could occur within the southern mountainous region in scrub and chaparral habitat. No individuals or populations of the species were observed.

San Gabriel Oak (*Quercus durata* var. *gabrielensis*). Federal Status: None; State Status: None; CNPS Status: 4.

San Gabriel oak occurs only in Los Angeles County in chaparral and cismontane woodland habitat at elevations of approximately 1,475 to 3,300 feet (450 to 1,000 m). This evergreen shrub that blooms from April to May is known only from the San Gabriel Mountains and is threatened by urbanization. This species

could occur within the southern mountainous region in chaparral habitat. No individuals or populations of the species were observed. This species is on the CNPS watch list because its distribution is limited to Los Angeles County.

White-bracted Spineflower (*Chorizanthe xanti* var. *leucotheca*). Federal Status: None; State Status: None; CNPS Status: List 1B.

Threatened throughout its range, white-bracted spineflower occurs in Los Angeles, Riverside, and San Bernardino counties in Mojavean desert scrub, and pinyon and juniper woodland habitats at elevations of 980 to 3,900 feet (300 to 1,200 m). This annual herb that blooms from April to June could occur within the southern mountainous region in the juniper woodland and desert scrub habitats. No individuals or populations of the species were observed. There is one CNDDDB occurrence recorded within the 7.5 minute USGS quadrangle Sleepy Valley.

Golden Violet (*Viola aurea*). Federal Status: None; State Status: None; CNPS Status: List 1B.

The golden violet is considered threatened throughout its range comprising Kern, Mono, San Bernardino, San Diego, and Sierra counties in Great Basin scrub, and pinyon and juniper woodland habitat in sandy soils at elevations of approximately 3,200 to 5,900 feet (1,000 to 1,800 m). This perennial herb that blooms from April to May is threatened by grazing.

This species could occur within the northern mountainous region in the juniper woodland and desert scrub habitats within sandy soils. Although no individuals or populations of the species were observed, there are two CNDDDB occurrences recorded within the 7.5 minute USGS quadrangles McKittrick Summit, Mohave, and Carneros Rocks.

C.3.4.2 Special-Status Wildlife Species

Surveys were conducted within the Project area for habitats capable of supporting special-status wildlife species. Prior to the surveys, information concerning the known distribution of threatened, endangered, or other special-status wildlife species with potential to occur in the area was collected from several sources and reviewed. The sources included the biological resource section the Proponents Environmental Assessment (PEA), the CDFG's Natural Diversity Database (CNDDDB, 2006) and information available through the USFWS, CDFG, Museum of Vertebrate Zoology, and California Academy of Sciences.

The CNDDDB was queried for occurrences of special-status wildlife species within the eleven USGS 7.5 minute quadrangles that contain the Project area. The specific habitat requirements and the locations of known occurrences of each special-status wildlife species were the principal criteria used for inclusion in the list of species potentially occurring within the Project area (Table C.3-5). Fifteen species were rejected from consideration due to the lack of suitable habitat, because the Project area is out the species range, or because the species does not breed in the Project area (Appendix 5). Expanded descriptions are included for those species for which suitable habitat is available, where specific surveys would be conducted, or where the resource agencies have expressed particular concern.

C.3.4.2.1 Federal or State Endangered or Threatened Species

Arroyo Toad (*Bufo californicus*). Federal Status: Endangered; State Status: Special Concern.

The arroyo toad is a robust-bodied species, with a maximum length of about 3.1 inches (7.9 cm). Dorsal coloration ranges from cream to light gray to light greenish-gray. Arroyo toads occur in coastal sage scrub, chaparral, oak woodland, grassland, and riparian habitats.

Table C.3-4. Special-status Plant Species, Their Status, and Potential Occurrence at the ATP Segment 2 and 3 Project Site.			
Name	Status*	Habitat	Potential For Occurrence On-Site
Alkali mariposa lily <i>Calochortus striatus</i>	CNPS List 1B	Alkali seeps, clay soils within chenopod scrub. In the Lancaster area, associated with "dune and pan" microtopography within the natural floodplain of Rosamond Lake.	Moderate: Suitable habitat is found in the moderately alkaline soils in the central Antelope Valley that exist in shallow depressions. No individuals were found in June 2006.
Slender mariposa lily <i>Calochortus clavatus</i> var. <i>gracilis</i>	CNPS List 1B	Coastal sage scrub or mixed scrub habitat limited to the Transverse Ranges of California.	Moderate: Suitable habitat is found within the foothills of the southern portion of the project site, in mixed scrub habitat. No individuals were observed in June 2006.
Palmer's mariposa lily <i>Calochortus palmeri</i> var. <i>palmeri</i>	CNPS List 1B	Moist, but not saturated, montane meadows.	Moderate: Suitable habitat is found within the southern foothills and may occur in the un-surveyed wind area. One population, tentatively identified, was observed in June 2006.
Plummer's mariposa lily <i>Calochortus plummerae</i>	CNPS List 1B	Rocky shallow soils, often on decomposed granitic deposits, within chaparral, woodland, or open forest communities.	Moderate: Suitable habitat exists in the southern portion of the proposed Project area, within the Transverse ranges. No individuals were observed in the June 2006 survey period.
San Gabriel bedstraw <i>Galium grande</i>	CNPS List 1B	Open chaparral, oak woodland, or similar woodland communities at high elevations.	Low: Suitable habitat occurs within the southern portion of the proposed Project in the higher areas of the foothills. No individuals were observed during the June 2006 survey period.
Short-joint beavertail <i>Opuntia basilaris</i> var. <i>brachyclada</i>	CNPS List 1B	Open chaparral, juniper woodland, or similar woodland communities, but not at high elevations.	Present: The species is known to occur at three locations along the alignment of segment 2, and suitable habitat exists along the entire length of segment 2.
Pierson's morning glory <i>Calystegia peirsonii</i>	CNPS List 4	Chaparral, chenopod scrub, cismontane woodland, coastal scrub, lower montane coniferous forest, and valley and foothill grasslands at elevations of 30-1500 meters.	Low: Suitable habitat occurs within the southern mountainous region in scrub and chaparral habitat. No individuals or populations were observed during the June 2006 survey period.
San Gabriel Oak <i>Quercus durata</i> var. <i>gabrielensis</i>	CNPS List 4	Chaparral and cismontane woodland habitat at elevations of 450-1000 meters.	Low: Suitable habitat occurs within the southern mountainous region in chaparral habitat.
White-bracted spineflower <i>Chorizanthe xanti</i> var. <i>leucotheca</i>	CNPS List 1B	Mojavean desert scrub and pinyon and juniper woodland habitats at elevations of 300-1200 meters.	Moderate: Suitable habitat occurs within the southern mountainous region in juniper woodland and desert scrub habitats. No individuals were observed during the June 2006 survey period.
Golden violet <i>Viola aurea</i>	CNPS List 1B	Great Basin scrub and pinyon and juniper woodland habitat in sandy soils at elevations of 3,280 to 5,900 feet (1000 to 1800 m).	Moderate: Suitable habitat occurs within the mountainous regions in the northern portion of the project site, the majority of which could not be surveyed during the June 2006 survey period.

Table C.3-5. Special-status Wildlife Species, Their Status, and Potential Occurrence at the ATP Segment 2 and 3 Project Site.			
Name	Status*	Habitat	Potential For Occurrence On-Site
Insects			
San Emigdio Blue Butterfly <i>Plebuna emigdionus</i>	FSSC	Shadscale saltbush is the species' only known food source for its larvae. Distribution is dependent upon presence of this plant.	Present: During reconnaissance-level surveys in June 2006, several males were found at nectar sources on the ridgetop above Amargosa Creek in the Project area.
Amphibians			
Arroyo toad <i>Bufo californicus</i>	FE, CSSC	Prefers sandy arroyos and drainage bottoms in 3 rd - to greater-order streams with open riparian vegetation in inland valleys and foothills; also may use flooded agricultural fields and irrigation ditches.	Low: Not known to occupy the Amargosa Creek system, the only habitat within the Project area where suitable breeding habitat exists. The species was not detected during focused surveys.
California red-legged frog <i>Rana aurora draytoni</i>	FT, CSSC	Inhabits permanent and semi-permanent aquatic habitats, such as creeks and cold-water ponds, with emergent and submergent vegetation. May estivate in rodent burrows or cracks during dry periods.	Moderate: Suitable habitat only exists in the Amargosa Creek system, and there is a CNDDDB record located approximately 2.4 miles from the proposed Amargosa Creek alignment crossing.
Desert tortoise <i>Gopherus agassizii</i>	ST, FT	Inhabits semi-arid grasslands, gravelly desert washes, canyon bottoms and rocky hillsides.	Low: Although the species was not detected during focused surveys conducted in these habitats in June 2006 and has never been detected in this area prior to this time, suitable habitat exists within the creosote scrub and Joshua tree woodland habitats in the northern portions of the Project area.
Yellow-blotched salamander <i>Ensatina eschscholtzii croceator</i>	CSSC	Oak, pine, fir, and mixed woodlands; also in canyons in leaf litter and debris from canyon live oaks.	Low: The woodland habitats types required by Tehachapi slender salamanders are absent from the northern portions of the Project area, where the known range of the species approaches the Project area.
Southwestern pond turtle <i>Emys (Clemmys) marmorata pallida</i>	CSSC	In and around a wide variety of permanent or nearly permanent aquatic habitats.	High: Suitable habitat present in the Amargosa Creek system and this species is known to occur near or within this drainage.
Tehachapi slender salamander <i>Batrachoseps stebbinsi</i>	ST	Inhabits moist canyons and ravines in oak and mixed woodlands. Found under rocks, logs, bark, leaf-litter and other debris in moist areas, often near talus slopes.	Low: The oak or mixed pine-oak woodland habitats types required by Tehachapi slender salamanders are absent from the northern portions of the Project area, where the known range of the species approaches the Project area.
Reptiles			
Silvery legless lizard <i>Anniella pulchra pulchra</i>	CSSC	Sandy or loose loamy soils covered by sparse vegetation.	High: Known to occur near the proposed alignment. May occur across a variety of undeveloped habitats within the Project area.
San Diego horned lizard <i>Phrynosoma coronatum blainvillei</i>	CSSC	Loose sandy loam and alkaline soils in habitats including chaparral, grasslands, saltbush scrub, coastal scrub, and clearings in riparian woodlands.	High: Known to occur near the proposed alignment. May occur across a variety of undeveloped habitats within southern and central portions of the Project area.
California horned lizard <i>Phrynosoma coronatum frontale</i>	CSSC	Loose sandy loam and alkaline soils in habitats including chaparral, grasslands, saltbush scrub, coastal scrub, and clearings in riparian woodlands.	Moderate: May occur across a variety of undeveloped habitats within northern portions of the Project area.
Two-striped garter snake <i>Thamnophis hammondi</i>	CSSC	In or near permanent freshwater, more commonly in pools of streams with a rocky substrate, bordered by riparian vegetation.	High: Known to occur in the Amargosa Creek system and could also be present in Anaverde Creek.

Table C.3-5. Special-status Wildlife Species, Their Status, and Potential Occurrence at the ATP Segment 2 and 3 Project Site.

Name	Status*	Habitat	Potential For Occurrence On-Site
Birds			
California Condor <i>Gymnogyps californianus</i>	SE, FE	Requires vast expanses of open savannahs, grasslands, and foothill chaparral in mountain ranges of moderate altitude. Nests in clefts of rocky walls of deep canyons. Can forage up to 100 miles (161 km) from roost/nest.	Low: Nesting habitat absent. Marginal foraging habitat is present, but the site is outside of the historical range of the species.
Swainson's Hawk <i>Buteo swainsoni</i>	ST	Nests in trees near foraging areas that include grasslands and agricultural croplands, especially alfalfa.	Present: Known to occur on or near alfalfa fields north of Avenue A. There are potential nest trees adjacent to these alfalfa fields. Two active nests were found adjacent to alfalfa fields north of Avenue A along avenues 110 West and 90 West during the reconnaissance-level surveys in June 2006.
yellow-billed cuckoo <i>Coccyzus americanus</i>	SE	Breeds in densely vegetated riparian associations of cottonwoods and willows.	Low: There is potentially suitable breeding habitat along Oak Creek near the intersection of Cameron and Tehachapi-Willow Springs roads near the northern end of the Project area. None were present during the reconnaissance-level surveys in June 2006.
Southwestern willow flycatcher <i>Empidonax traillii eximius</i>	SE, FE	Breeds in densely vegetated riparian associations of cottonwoods and willows.	Low: There is potentially suitable breeding habitat along Oak Creek near the intersection of Cameron and Tehachapi-Willow Springs roads near the northern end of the Project area. None were present during the reconnaissance-level surveys in June 2006.
vermillion flycatcher <i>Pyrocephalus rubinus</i>	CSSC	Nests in desert riparian and landscaped cottonwoods and other trees in developed areas including golf courses; often near agricultural or grassland areas.	Low: There is potential nesting habitat in the trees along roads and near houses on the Antelope Valley floor, especially in the vicinity of alfalfa fields. The riparian trees along Oak Creek also provide potential nesting habitat. None were found during reconnaissance-level surveys in June 2006.
least Bell's vireo <i>Vireo bellii pusillus</i>	SE, FE	Dense riparian scrub including willows and mulefat.	Low: There is suitable habitat along Amargosa Creek near the southern end of the Project area, and along Oak Creek near the intersection of Cameron and Tehachapi-Willow Springs roads near the northern end. None were present during the reconnaissance-level surveys in June 2006.
long-eared Owl <i>Asio otus</i>	CSSC	Breeds in thickly vegetated desert washes and oases, montane coniferous forests and in riparian and pinyon-juniper woodlands.	Present: Known to nest at Apollo Park near the Project area. A non-breeding roosting site was found during the reconnaissance-level surveys in June 2006. There were at least 15 individuals in athel tamarisk along 90 th Street north of Rosamond Boulevard.
Western burrowing owl <i>Athene cucularia</i>	CSSC	Found in open, dry grasslands, agricultural and range lands, and desert habitats often associated with burrowing animals, such as ground squirrels.	Present: Project area contains suitable foraging habitat and California ground squirrel burrows that could provide breeding habitat. One nest site was found during the reconnaissance-level surveys in June 2006.
loggerhead shrike <i>Lanius ludovicianus</i>	CSSC	Nests in isolated tall shrubs and dense trees (including Joshua trees) in open landscapes. Forages in desert scrub, agricultural fields, grasslands, and Joshua tree woodlands.	Present: Many were found scattered throughout grassland, alkali sink, open scrub, and agricultural fields during the reconnaissance-level surveys in June 2006.

Table C.3-5. Special-status Wildlife Species, Their Status, and Potential Occurrence at the ATP Segment 2 and 3 Project Site.

Name	Status*	Habitat	Potential For Occurrence On-Site
LeConte's thrasher <i>Toxostoma lecontei</i>	CSSC	Occurs in desert scrub habitats, open washes, and Joshua tree woodland.	Present: At least two pairs were found in creosote and Joshua tree woodland north of Rosamond Boulevard during the reconnaissance-level surveys in June 2006.
Bendire's thrasher <i>Toxostoma bendirei</i>	CSSC	Nests in complex desert scrub habitats and Joshua tree woodland.	Moderate: Suspected to occasionally occur in potential nesting habitat within the Project area north of Rosamond Boulevard, but there are no documented records.
summer tanager <i>Piranga rubra</i>	CSSC	Breeds in mature, desert riparian habitats dominated by cottonwood and willow.	Low: There is suitable breeding habitat along Oak Creek near the intersection of Cameron and Tehachapi-Willow Springs roads near the northern end of the Project area. None were present during the reconnaissance-level surveys in June 2006.
ferruginous hawk <i>Buteo regalis</i>	CSSC	Forages in grasslands and agricultural fields.	High: Known to occur in the Antelope Valley during winter and likely present on the Project area.
merlin <i>Falco columbarius</i>	CSSC	Forages in most habitats, especially near concentrations of small birds that they prey upon, including shorebirds.	High: A few Merlin are likely present during the winter or migration periods.
short-eared owl <i>Asio flammeus</i>	CSSC	Breeds in marshes or in nearby moist grasslands or fallow fields. Forages in the same habitats but may also forage in agricultural fields and dry grasslands.	Moderate: There is no breeding habitat in the Project area, but was documented to occur at the nearby Piute Ponds during June 2006. It is likely to occur as a wintering bird in the Project area, especially in the grasslands and agricultural fields. None were found during reconnaissance-level surveys in June 2006.
olive-sided flycatcher <i>Contopus cooperi</i>	CSSC	Breeds in coniferous forests, but can be found in any wooded habitat during migration.	High: It is likely to occur as a migrant in the numerous planted trees and in the few riparian woodlands in the Project area. None were found during reconnaissance-level surveys in June 2006.
Northern harrier <i>Circus cyaneus</i>	CSSC (nesting only)	Breeds and forages in emergent wetlands and nearby open grasslands, and fallow fields. Also forages in agricultural fields and desert scrub.	Present: Known to breed at or near marshes at Piute Ponds on the eastern side of Hwy 14. Not suspected to breed on the Project area. Foraging birds were present within the Project area during reconnaissance-level surveys in June 2006.
prairie falcon <i>Falco mexicanus</i>	CSSC (nesting only)	Forages in desert scrub, grasslands, agricultural fields and Joshua tree woodland. Nests on cliffs or escarpments, usually overlooking dry, open terrain or uplands.	Present: No suitable nesting substrates or nests were found within 0.5 miles of the Project area. At least three foraging individuals were observed during the reconnaissance-level surveys in June 2006. One was foraging in Joshua tree woodland north of Rosamond Boulevard, another was along Avenue A in sagebrush scrub, and another was along 110 th Avenue in annual grassland.
mountain plover <i>Charadrius montanus</i>	CSSC	Winters in short grasslands and agricultural fields. Breeds in short-grass prairies outside of California.	High: Wintering flocks annually occur in agricultural fields in the Antelope Valley. The alfalfa fields are the most likely locations for this species in the Project area, but they may also visit the numerous grasslands in the Project area.
long-billed curlew <i>Numenius americanus</i>	CSSC (nesting only)	Winters and migrates in short grasslands and agricultural fields. Breeds in short-grass prairies and meadows outside of southern California.	High: There are known wintering and migratory occurrences in tilled agricultural fields and grasslands in the Antelope Valley.

Table C.3-5. Special-status Wildlife Species, Their Status, and Potential Occurrence at the ATP Segment 2 and 3 Project Site.			
Name	Status*	Habitat	Potential For Occurrence On-Site
California gull <i>Larus californicus</i>	CSSC (nesting only)	Breeds on islands in lakes and open marshes. Forages in a variety of habitats including marshes, nearshore Pacific Ocean, lakes, agricultural fields, landfills, rivers, grasslands and parks.	Moderate: It does not breed in the Antelope Valley, but non-breeding gulls are likely to forage in the Project area. None were found during reconnaissance-level surveys in June 2006.
tricolored blackbird <i>Agelaius tricolor</i>	CSSC	Nests in freshwater emergent wetlands, nettle, thistle, willow riparian thickets, and in crops such as alfalfa and safflower.	Low: Nesting colonies in the Antelope Valley are in freshwater marshes. Foraging birds are expected to occur within the Project area. None were found during reconnaissance-level surveys in June 2006.
white-tailed kite <i>Elanus leucurus</i>	SP	Forages in open grasslands, desert scrub and agricultural fields. Nests on trees and large shrubs.	Moderate: Rare and local breeder in Antelope Valley, with no confirmed breeding in the Project area. More common during the winter, and likely to forage in the Project area. No kites were found during the reconnaissance-level surveys in June 2006.
golden eagle <i>Aquila chrysaetos</i>	SP	Forages in open grasslands, desert scrub and agricultural fields. Nests on ledges on cliff faces, rock outcrops and occasionally in large trees.	Moderate: No suitable nesting substrates or nests were found within 0.5 miles (0.8 km) of the Project area. No eagles were observed during the reconnaissance-level surveys in June 2006. There are many winter records from the Antelope Valley; however, there are few summer records.
Mammals			
Mohave ground squirrel <i>Spermophilus mohavensis</i>	ST	Desert scrub habitats, usually on flat to gently sloping terrain with alluvial soils.	Present: Suitable habitat in Joshua tree woodland and creosote scrubland south of Oak Creek Drive; one individual was seen within the Project area during the reconnaissance-level surveys on June 8, 2006.
American Badger <i>Taxidea taxus</i>	CSSC	Found in a variety of grassland habitats, usually in association with burrowing mammals, their primary prey.	Moderate: Suitable habitat on the Valley floor in non-native grassland habitats. May occur in the vicinity of ground squirrel colonies.
Tehachapi pocket mouse <i>Perognathus alticolus inexpectatus</i>	CSSC	Habitat not well defined but occurs in a diversity of habitats including, Joshua tree woodland, pinyon-juniper woodland, oak savanna, and native and non-native grasslands. Burrows in friable, sandy soil.	High: There is suitable habitat throughout the project site. Occurrence is most likely in the foothills and Tehachapi Mountain range in the northern section of the Project area, where nearby CNDDDB records exist.
Southern grasshopper mouse <i>Onychomys torridus ramona</i> and Tulare grasshopper mouse <i>Onychomys torridus tularensis</i>	CSSC	Occurs in alkali desert scrub, and also succulent shrub, wash, and riparian communities. Subspecies also can occur in grassland and chaparral habitats.	Moderate: Some areas in the central portion of the Project area contain marginal habitat. Foothills in the northern and southern portion of the project site, close to where CNDDDB records occur, provides better habitat.
Ringtail <i>Basariscus astutus</i>	CSSC, SP	Occurs primarily in riparian habitats, but also known from most forest and shrub habitats from lower to mid elevations.	Moderate: Suitable habitat exists along Oak Creek near the intersection of Cameron and Tehachapi Willow Springs roads near the northern end of the project. In the southern section, suitable habitat is also present in the Ritter Ridge area.
Pallid bat <i>Antrozous pallidus</i>	CSSC	Typically roost in rocks, caves, trees snags, bridges, and buildings. Occurs in grassland, shrubland, woodlands, and coniferous forests near water.	High: Roosting habitat was observed in the northern and southern tip of the Project area and in the valley where buildings occur.
Townsend's big-eared bat <i>Corynorhinus townsendii</i>	CSSC	Typically roost in buildings, bridges, rock crevices, and hollow trees, but primarily in abandoned mines. Occurs in coniferous forests, mixed forests, deserts, native prairies, riparian communities, active agricultural areas, and coastal habitat types.	Moderate: No primary roosting habitat was observed within the Project area, but suitable roosting habitat was observed in the northern and southern foothill areas of the Project area.

Table C.3-5. Special-status Wildlife Species, Their Status, and Potential Occurrence at the ATP Segment 2 and 3 Project Site.

Name	Status*	Habitat	Potential For Occurrence On-Site
Western mastiff bat <i>Eumops perotis</i>	CSSC	Typically roost in crevices in large boulders and buildings, but primarily roosts in cliffs. Occurs in broad open areas and forages in dry desert washes, flood plains, chaparral, oak woodland, open ponderosa pine forest, grassland, and agricultural areas.	High: Roosting habitat was observed in the northern and southern tip of the Project area and in the valley where buildings occur.
Spotted bat <i>Euderma maculatum</i>	CSSC	Roost sites are cracks, crevices, and caves, and primarily in fractured rock cliffs. Occurs in desert-scrub, pinyon-juniper woodland, ponderosa pine, mixed conifer forest, canyon bottoms, rims of cliffs, riparian areas, fields, and open pasture.	Low: Roosting habitat was not observed. Foraging habitat was observed throughout the Project area.
Big free-tailed bat <i>Nyctinomops macrotis</i>	CSSC	Roosts primarily in cliff and rocky areas, buildings and occurs in desert scrub and arid forests.	Low: May rarely migrate through the Project area.
Western red bat <i>Lasiurus blossevillii</i>	WBWG: High priority	Typically roost in trees, hedgerows and forest edges.	Low: Some marginal roosting habitat was observed.

*LISTING STATUS

FE	=	Federally listed Endangered
FT	=	Federally listed Threatened
FD	=	Federally delisted
FC	=	Federal Candidate. Sufficient biological information to support a proposal to list the species as Endangered or Threatened
FSSC	=	Federal Species of Special Concern
SE	=	State listed Endangered
ST	=	State listed Threatened
CSSC	=	California Species of Special Concern
SP	=	State Protected Species
CNPS 1B	=	Plants considered by CNPS to be rare, threatened, or endangered in California, and elsewhere
CNPS 2	=	Plants rare, threatened, or endangered in California, but more numerous elsewhere
CNPS 3	=	Plants about which we need more information - A review list.
CNPS 4	=	Plants of limited distribution

Arroyo toads have one of the most specialized habitats requirements of any amphibian in California. Adults require overflow pools adjacent to the inflow channel of greater order streams that are free of predators. Normally, pools with little woody vegetation surrounding them that are shallow, with sandy or gravelly bottoms, are preferred. The distribution of arroyo toads historically extended from the upper Salinas River system in San Luis Obispo County south into coastal Baja California (Jennings and Hayes, 1994). Records for the species also exist from six drainages on the desert slope, including Little Rock Creek. Adults are almost entirely nocturnal and primarily active between the first major rains in January and February to early August (Cunningham, 1962). After males emerge from over-wintering sites within the stream terrace or adjacent upland habitat, they precede females to breeding pools and call nightly from late March to late June (Sweet, 1993).

The CNDDDB (2006) lists two occurrences of arroyo toads within the quadrangles that overlay the proposed and alternative alignments. These occurrences, from 1970 and 2001, are both from Little Rock Creek and are respectively located approximately 18.6 miles (29.9 km) southeast and 20.9 miles (33.6 km) southeast of the location where the proposed and alternative alignments cross Amargosa Creek. The Amargosa Creek alignment crossing is the only location along the proposed and alternative alignments where suitable breeding and upland habitat for arroyo toads exists and arroyo toads have some potential to occur. However, arroyo toads have never been detected in Amargosa Creek, and the species was not detected during focused (non-protocol level), daytime and nocturnal surveys conducted on June 14 and 15, 2006 or during a daytime reconnaissance survey conducted on June 13, 2006. Each focused survey covered an approximately 1,500-foot (0.5-km) transect along Amargosa Creek centered at the proposed Amargosa Creek alignment crossing. During daytime focused surveys, the transect was visually surveyed for arroyo toad larvae. During nocturnal surveys, which were initiated at approximately 9:00 p.m., the transect was visually surveyed for active, post-metamorphic arroyo toads using a headlamp. Calling surveys were also incorporated as a component of each of the focused, nocturnal surveys for arroyo toads. Calling surveys were conducted by driving and parking at turnouts along Elizabeth Lake Road between Godde Hill Road and 25th Street West. During stops at these turnouts, the surveyor listened for calling male arroyo toads in nearby Amargosa Creek, which roughly parallels Elizabeth Lake Road. No calling arroyo toads were heard during these surveys. Given the proximity of Amargosa Creek to Elizabeth Lake Road along this reach of the drainage, it is likely that the surveyor would have heard calling arroyo toads, if present.

Considering the known distribution of the arroyo toad, as well as the results of the focused and reconnaissance surveys, arroyo toads are not expected to occur near the proposed Amargosa Creek alignment crossing. Suitable habitat for arroyo toads was not observed elsewhere near any proposed or alternative alignment during extensive reconnaissance surveys.

California Red-legged Frog (*Rana aurora draytonii*). Federal Status: Threatened; State Status: Special Concern.

The California red-legged frog is a member of the family Ranidae within the order Anura, and is one of two subspecies of the red-legged frog (*Rana aurora*) (USFWS, 2000). The *draytonii* subspecies was included as a Category 1 candidate species in the U.S. Fish and Wildlife Service's Annual Notice of Review in November 21, 1991 (USFWS, 1991). On June 24, 1996, the California red-legged frog was officially listed as a threatened species under the auspices of the ESA (USFWS, 1996) based largely on a significant range reduction and continued threats to surviving populations (Miller, 1994). Factors related to declines in populations of red-legged frogs include the degradation or loss of habitat attributed to agricultural practices, introduced plants and animals, livestock grazing, mining, water diversions and impoundments, recreation activities, timber harvesting, and urbanization (USFWS, 2000). In the Central Valley of California alone,

more than 90 percent of the historic wetlands have been lost or altered because of agricultural and urban development (Dahl, 1990).

Adult California red-legged frogs have been observed to breed from late November through early May after the onset of warm rains (Storer, 1925; Jennings and Hayes, 1994). Most larvae metamorphose into juvenile frogs between July and September. Post-metamorphic frogs grow rapidly by feeding on a wide variety of invertebrates. Adult frogs apparently eat a wide variety of animal prey including invertebrates, small fishes, frogs, and small mammals (Hayes and Tennant, 1985; Arnold and Halliday, 1986).

California red-legged frogs have been observed in a number of aquatic and terrestrial habitats throughout their historic range. Larvae, juveniles, and adult frogs occur in natural lagoons, dune ponds, pools in or next to streams, streams, marshlands, sag ponds, and springs, as well as human-created stock ponds, secondary and tertiary sewage treatment ponds, wells, canals, golf course ponds, irrigation ponds, sand and gravel pits containing water, and large reservoirs (Storer, 1925; Jennings, 1988). The key to the presence of California red-legged frogs in these habitats is the presence of perennial, or near perennial, water and the general lack of introduced aquatic predators such as crayfish (*Pacifastacus leniusculus* and *Procambarus clarkii*), bullfrogs, green sunfish, bluegill (*L. macrochirus*), and centrarchid fishes such as largemouth bass (*Micropterus salmoides*).

If water at least several inches in depth is present and introduced aquatic predators are rare or absent, California red-legged frogs may be present. If the aquatic habitat favors introduced aquatic predators, then red-legged frogs would probably disappear from that particular site unless there is a nearby breeding site available that excludes the introduced predators. The habitats observed to contain the largest densities of red-legged frogs are associated with pools at least 27 inches (68.6 cm) deep with overhanging willows (*Salix* spp.) and an intermixed fringe of narrow-leaved cattails (*Typha latifolia*), tules, or sedges (*Carex* spp.) (Hayes and Jennings, 1988). In addition to aquatic habitats, juvenile and adult California red-legged frogs use areas of riparian vegetation within a few yards of water. This species also uses small mammal burrows in or under vegetation, willow root wads, and the undersides of old boards and other debris within the riparian zone.

Radio-telemetry studies conducted in lagoons and the lower reaches of streams along the Central Coast of California indicate that adult red-legged frogs would move within the riparian zone from well-vegetated areas to pools to hydrate during periods when many of the Central Coast streams are dry except for isolated pools (Rathbun *et al.*, 1993). During wet periods, especially in the winter and early spring, red-legged frogs can move a mile between aquatic habitats. This movement often occurs across inhospitable frog habitat like roads, open fields, and croplands. This type of movement, which is best documented in mesic coastal areas, may result in frogs occupying aquatic habitats isolated from known frog populations.

The draft USFWS recovery plan for the California red-legged frog identifies eight “recovery units” that delineate geographic areas where recovery efforts to delist the frog would occur (USFWS, 2000). To facilitate recovery, core areas were defined within the recovery units to focus conservation actions (USFWS, 2000). These areas represent the areas where restoration is most feasible, reestablishment efforts are most likely to be successful, and natural re-colonization is expected (USFWS, 2000).

The CNDDDB (2006) lists one record for the California red-legged frog within the quadrangles that overlay the proposed and alternative alignments. This record from 1995 is from a pond on Ritter Ranch in the Sleepy Valley quadrangle and is located approximately 2.4 miles (3.9 km) west-northwest of the point where the proposed alignment crosses Amargosa Creek. Marginally suitable habitat for California red-legged frogs exists at the proposed Amargosa Creek alignment crossing. With a maximum water depth of approximately one foot (0.3 m) along an approximately 1,500-foot (0.5-km) transect of the drainage centered at this crossing,

the habitat within this reach of Amargosa Creek is not optimal for red-legged frogs. However, better habitat for the species may exist in other reaches of the drainage, including reaches near the proposed Amargosa Creek alignment crossing.

The proximity of an existing record and marginal habitat conditions at the alignment crossing are indications that red-legged frogs may occupy this reach of Amargosa Creek. In response to these circumstances, focused (though non-protocol level), daytime and nocturnal surveys for California red-legged frogs were conducted on June 14 and 15, 2006. Each focused survey covered an approximately 1,500-foot (0.5-m) transect of Amargosa Creek centered at the proposed Amargosa Creek alignment crossing. During daytime focused surveys, the transect was visually surveyed for red-legged frog larvae. During nocturnal surveys, which were initiated at approximately 9:00 p.m., the transect was visually surveyed for active, post-metamorphic red-legged frogs using a headlamp. Red-legged frogs were not detected during any focused survey, nor were they observed during a daytime reconnaissance survey on 13 June 2006.

California red-legged frogs were not observed during any site visit or focused survey between June 13 and 15, 2006, and it is unlikely that reaches of the drainage near the proposed alignment crossing are occupied by the species on a permanent basis. However, red-legged frogs may utilize these reaches as a movement/dispersal corridor at various times, especially during late winter and early spring. Suitable habitat for red-legged frogs was not observed elsewhere near any proposed or alternative alignment during extensive reconnaissance surveys.

Swainson's Hawk (*Buteo swainsoni*). Federal Status: None; State Status: Threatened.

The Swainson's Hawk is a large soaring bird of open habitats. Swainson's Hawks are most easily distinguished from other members of its genus, such as the familiar Red-tailed Hawk, by their more slender body and narrow, pointed, and slightly upturned wings.

Swainson's Hawks were once one of the most common birds of prey in the grasslands of California. They once nested in the majority of the lowland areas in the state. Currently, the nesting range is primarily restricted to portions of the Sacramento and San Joaquin valleys, northeast California, and the Western Mojave, including Antelope Valley (Bloom 1980; Bloom pers. comm.). It was listed as threatened by the State of California in 1983.

Swainson's Hawks require large amounts of foraging habitat, preferably grassland or pasture habitats. Their preferred prey items are voles (*Microtus* spp.), gophers, birds, and insects such as grasshoppers (Estep, 1989).

They have adapted to the use of some croplands, particularly alfalfa, but also hay, grain, tomatoes, beets, and other row crops (Estep 1989). Crops such as cotton, corn, rice, orchards, and vineyards are not suitable because they either lack suitable prey or the prey is unavailable to the Swainson's Hawks due to crop structure.

Land conversion for agricultural purposes in the Antelope Valley have led to an increase of high-quality patches of foraging habitat (alfalfa fields) large enough to sustain Swainson's Hawks. Two nesting pairs have been documented within ten miles (16 km) of the project site (CNDDDB, 2006; P. Bloom pers. Comm.) and were confirmed during surveys in June 2006. Within the Antelope Valley, potential foraging habitat comprising annual grasslands, fallow fields, and alfalfa fields is abundant within the vicinity of the Project area within the Antelope Valley.

Yellow-billed Cuckoo (*Coccyzus americanus*). Federal Status: None; State Status: Endangered.

This neotropical migrant is in California due to the loss of habitat. It is a riparian obligate in the western United States and, in southern California, is restricted to a few riparian locations, especially the South Fork of the Kern River to north of the Project area. The species is an unusually late migrant in California, with most observations coming after late May. This insectivorous species is regularly found during spring migration in the desert oases and riparian patches in the western Mojave Desert, and may potentially breed at any of these locations. The riparian area along Oak Creek at and near the Project area may provide suitable habitat for this species.

Southwestern Willow Flycatcher (*Empidonax traillii extimus*). Federal Status: Endangered; State Status: Endangered.

This locally rare subspecies of the Willow Flycatcher is another riparian obligate that prefers well-developed riparian gallery forests with flooded surface water or a damp understory. A neotropical migrant and insectivore, the Southwestern Willow Flycatcher nests in willows, nettles, and lower branches of cottonwoods. It is generally a late migrant with most of the population arriving in mid-May to early June. Willow Flycatchers, representative of other subspecies that breed farther north into southern Canada, are common migrants through the Mojave Desert region. Because of these numerous migrants, care must be taken to document the Southwestern Willow Flycatcher in breeding locations in the region. This species may occur in the potentially suitable habitat along Oak Creek in and near the Project area.

Vermilion Flycatcher (*Pyrocephalus rubinus*). Federal Status: Endangered; State Status: Species of Special Concern.

This brightly colored, red flycatcher has been expanding its range in California, and has recently established breeding populations near the Project area in the vicinity of Mojave, California City, and Ridgecrest. Breeding populations depart during the winter, but wintering birds are occasionally found outside of breeding areas. Although the Vermilion Flycatcher is often found in riparian areas, it also occurs on golf courses, open parks with scattered trees, and agricultural landscapes with trees and shrubs. This species could potentially occur anywhere in the Project area where there are trees, including riparian patches along Amargosa Creek and Oak Creek.

Least Bell's Vireo (*Vireo bellii pusillus*). Federal Status: Endangered; State Status: Endangered.

This insectivorous species is a small, neotropical migrant that generally arrives on breeding grounds by mid-March to mid-April, depending upon elevation and local conditions. It tends to occupy early successional stages of riparian scrub, and is well known as a vociferous bird throughout the heat of the day. Although not normally found in the western Mojave Desert region, recent records exist from the South Fork of the Kern River, the southern Owen's Valley, and the southern San Joaquin Valley in Tulare County. Due to the apparent northward expansion of this species, it may occur in the suitable habitat along the Amargosa Creek and Oak Creek.

Mohave Ground Squirrel (*Spermophilus mohavensis*). Federal Listing Status: None; State Listing Status: Threatened.

The Mohave ground squirrel is known to occur in portions of four counties (Inyo, Kern, Los Angeles, and San Bernardino) in the Lower Sonoran Life Zone of the western Mojave Desert. The Mohave ground squirrel occupies open creosote bush scrub, alkali desert scrub, and Joshua tree woodland in areas with flat to moderate

terrain. The Mohave ground squirrel tends to avoid rocky areas and typically constructs burrows in sandy, alluvial, and gravelly soils.

The Mohave ground squirrel emerges from aestivation in spring, typically between mid-February and March, and is active during the day foraging for vegetation, seeds, arthropods, and fruit (Best, 1995) and tends to stay close to its burrow while foraging. Burrows are used for predator avoidance and temperature control. The breeding season occurs soon after emergence and gestation lasts about 30 days (Best, 1995). Avian and terrestrial predators of the Mohave ground squirrel include the Mohave rattlesnake (*Crotalus scutulatus*), desert kit fox (*Vulpes macrotis arsipus*), coyote, North American badger, bobcat, Prairie Falcon, Golden Eagle, and Red-tailed Hawk (Best, 1995). After acquiring fat stores for hibernation, the Mohave ground squirrel typically enters aestivation in July or August. Habitat conversion to agriculture, suburban and urban land development, and military base development and operation has contributed to a decline in the abundance of Mohave ground squirrels.

Reconnaissance-level surveys were conducted on June 5 through 9, and June 15 and 16, 2006, for habitats capable of supporting Mohave ground squirrels. Two individual Mohave ground squirrels were observed during these surveys. On June 8, 2006, a squirrel was seen within the Project boundary (UTM zone 11, E 382093 N 3876504) in creosote/Joshua tree woodland. On June 16, 2006, another squirrel was observed approximately two miles (3.2 km) northeast of the Project area along Koch Road (UTM zone 11, E 382093 N 3876504) in creosote desert scrub habitat.

Habitat suitability between the locations of the June 2006 sightings and the range of the species depicted within the CNDDDB (Figure C.3-4) was evaluated during reconnaissance-level surveys. A contiguous band of native creosote bush scrub habitat, with a minimum width of approximately one mile (1.6 km), exists along the foothills of the Tehachapi Mountains. This habitat connects the Project area in the northern portion of the Antelope Valley to the species' designated range. Records in the CNDDDB and recent sightings within this habitat suggest that it may constitute a corridor, enabling the species to disperse from core habitat to the east and persist in parts of the Antelope Valley.

The habitat in much of the northern portion of the Project area is comprised of creosote scrub and Joshua tree woodland, both of which are suitable Mohave ground squirrel habitat. In this portion of the Project area, the vegetation quickly turns from Joshua tree woodland to desert scrub with sage and juniper just north of Oak Creek Road. Desert scrub with sage and juniper is not a vegetation type associated with the Mohave ground squirrel, and as such Oak Creek Road is a reasonable northern boundary for the expected range of this species within the Project area.

South of Backus Road, the habitat gradually becomes increasingly fragmented and dominated by vegetation types less strongly associated with Mohave ground squirrels. The habitat south of Yucca Road and north of Rosamond Boulevard is predominantly saltbush scrub with intermittent patches of creosote scrub, and is contiguous with open creosote and Joshua tree habitat on the western side of the Antelope Valley. Mohave ground squirrels may occupy suitable habitats within this portion of the Project area.

The southern extent of the distribution of Mohave ground squirrel, within the northern portion of the Project area, is likely to be Rosamond Boulevard. The habitat south of Rosamond Boulevard is increasingly dominated by agricultural land and non-native annual grassland, which are unsuitable for this species. The desert scrub habitat that is dispersed within these unsuitable habitats contains little to no creosote or Joshua tree habitat. Furthermore, south of Rosamond Boulevard, agriculture isolates the Project area from the creosote scrub and Joshua tree woodland habitat in the western portion of the Antelope Valley.

Within the southern Project area, Leona Valley is not considered potential Mohave ground squirrel habitat because the desert scrub habitat comprises sagebrush, rabbitbrush, and juniper with an understory of tall annual grasses; all of which are unsuitable habitats for Mohave ground squirrels. Mohave ground squirrels are also considered to be absent from the native habitats in the vicinity of Vincent. The habitats are dominated by juniper with an understory of non-native annual grasses and forbs, and inclusions of creosote brush. The creosote brush, however, is clumped together, often with other shrub species, rather than hyper-dispersed as is typical in creosote flats. This clumping of creosote with juniper and other shrubs is commonly seen at the transition into the Upper Sonoran Life Zone as described by Merriam (1890). Typical Mohave ground squirrel habitat is located within the Lower Sonoran Life Zone, characterized by hyper-dispersed creosote. Furthermore, the pockets of creosote and desert scrub habitat in the Vincent area are small relative to the home range of Mohave ground squirrels and isolated from suitable habitat several miles to the north.

Desert Tortoise (*Gopherus agassizii*). Federal Listing Status: Threatened; State Listing Status: State Threatened.

The desert tortoise is an herbivore that may attain a length of 9 to 15 inches (23 to 38 cm) in carapace length. The tortoise is able to live where ground temperature may exceed 140° F (60° C) because of its ability to dig burrows and escape the heat. At least 95 percent of its life is spent in burrows. Within these burrows, it is also protected from freezing while dormant during November through February or March (USFWS, 1994).

The presence of soil suitable for digging burrows limits desert tortoise distribution (USFWS, 1994). Some of their burrows extend just beyond the shell of the tortoise, while others extend for several feet. A single tortoise may have a dozen or more burrows distributed over its home range. Different tortoises may use these burrows at different times. Desert tortoises inhabit semi-arid grasslands, gravelly desert washes, canyon bottoms, and rocky hillsides (USFWS, 1994).

Diet composition varies throughout the tortoise's range. If winter rainfall has been sufficient to result in germination of annuals, these are used heavily when the tortoises emerge from winter torpor (USFWS, 1994). Other herbs, grasses, some shrubs, and the new growth of cacti and their flowers comprise a major portion of the diet. If there is summer rain, tortoises would utilize dry forage (USFWS, 1994). Common Ravens, Gila monsters (*Heloderma suspectum*), kit foxes, badgers, roadrunners (*Geococcyx californianus*), and coyotes are all natural predators of the desert tortoise. They prey on juveniles, which are 2 to 3 inches (5 to 7 cm) long with a thin, delicate shell (USFWS, 1994).

Plant species play a major role in defining desert tortoise habitat. Creosote bush, burrobush, Mojave yucca (*Yucca schidigera*) and blackbrush (*Coleogyne ramosissima*) generally distinguish desert tortoise habitat. At higher altitudes, Joshua tree, and galleta grass (*Pleuraphis rigida*) are common plant indicators (USFWS, 1994).

Focused, non-protocol level surveys for desert tortoise were conducted on June 15 and 16, 2006, in most portions of the proposed and alternative alignments in which habitat appeared to be suitable for desert tortoise and for which access had been granted. The surveys were conducted by walking wandering transects, and focused on detecting tortoise sign (*i.e.*, live tortoises, shell, bones, scutes, limbs, scats, burrows, tracks, egg shell fragments, etc.). The focused surveys encompassed the general area of the proposed and alternative alignments beginning approximately three miles north of Willow Springs in the south and extended northward to the southern property boundary of the Cal Cement Plant, which lies just east of the Tehachapi Willow Springs Road. The survey area spanned the width of the proposed and alternative alignments plus a buffer of several hundred feet on each side. Approximately 60 to 70 percent of the total survey area was covered during the focused surveys. Although the habitat within the area surveyed, dominated by Joshua trees and creosote

bush, appeared to be suitable for desert tortoises, no sign of desert tortoises was detected during any focused survey.

The CNDDDB (2006) lists no record for desert tortoise within the quadrangles that overlay the proposed and alternative alignments, and all portions of these alignments lie outside of the known range of the species. Although no records for desert tortoises exist within the Project area and no sign of their presence was detected during focused surveys, desert tortoises could be present in some Joshua tree woodland- creosote bush scrub habitats within the Project area.

C.3.4.2.2 Federal or State Species of Special Concern

San Emigdio Blue Butterfly (*Plebuna emigdionus*). Federal Status: on former Species of Concern list; State Status: None.

This rare, small butterfly is known from only a few locations, restricted to the foothills along the southern extreme of the San Joaquin Valley, and in foothill locations in the Mojave Desert region. Shadscale saltbush is the larvae's only known food source, so this butterfly's distribution is dependent upon presence of this plant. There are only two previously documented locations in Los Angeles County, and one, Bouquet Canyon, is very close to the Project area at the Amargosa Creek crossing. During reconnaissance level surveys in June 2006, several males were observed at nectar sources on the ridge top above Amargosa Creek in the Project area.

Yellow-blotched salamander (*Ensatina eschscholtzii croceator*). Federal Status: Special Concern; State Status: Special Concern.

The yellow-blotched salamander is a member of the family Plethodontidae and one of seven currently recognized subspecies of the *Ensatina eschscholtzii* species complex (Petranka, 1998). Individuals have a black dorsal ground color, with large yellow or yellowish spots. The yellow-blotched salamander occurs in the Tehachapi Mountains, Mount Pinos, and the vicinity of Fort Tejon (Stebbins, 1985). The subspecies occurs in a wide variety of habitats, ranging from California black oak, blue-oak, and gray pine communities, to Jeffrey pine, ponderosa pine, and white fir open forest communities (Jennings and Hayes, 1994). It also may be found in canyons in leaf litter and debris from canyon live oaks (*Quercus chrysolepis*) (Jennings and Hayes, 1994).

The CNDDDB (2006) lists one 1991 record for the yellow-blotched salamander within the quadrangles that overlay the proposed and alternative alignments. This occurrence is from Antelope Canyon in the Tehachapi Mountains, approximately 3.6 miles (5.8 km) west of the proposed alignment. However, along the Tehachapi Mountains portion of the proposed and alternative alignments, where yellow-blotched salamanders might otherwise occur, suitable pine-oak woodland habitats are not present. Other portions of the proposed and alternative alignments lie outside the known range of the species. Therefore, yellow-blotched salamanders are not expected to occur anywhere along the proposed and alternative alignments.

Silvery Legless Lizard (*Anniella pulchra pulchra*). Federal Status: None; State Status: California Species of Special Concern.

This unusual lizard is found in sandy or loose loamy soils under the sparse vegetation of beaches, chaparral, desert, pine-oak woodland, or under sycamores, cottonwoods, or oaks that grow on stream terraces. Legless lizards forage for insects and spiders underneath leaf litter or underneath sandy soil, usually at the base of shrubs or other vegetation (Jennings and Hayes, 1994). Their adaptation for burrowing, which requires soils with a high sand fraction, makes legless lizards vulnerable to ground disturbing activities such as agriculture.

The CNDDDB (2006) lists six records for the silvery legless lizard within the quadrangles that overlay the proposed and alternative alignments. These occurrences, which date from between 1988 and 2005, are distributed around the Lancaster-Palmdale area. Considering the wide variety of habitats silvery legless lizards are known to occupy, this species could be relatively abundant across the proposed and alternative alignments. However, the species' cryptic nature makes it very difficult to detect, and its actual distribution across the Project area is unknown.

Southwestern pond turtle (*Emys [Clemmys] marmorata pallida*). Federal Status: None; State Status: Special Concern.

The southwestern pond turtle is a medium-sized brown or olive-colored aquatic turtle, and is found west of the Sacramento-San Joaquin Delta, and south to northern Baja, except in desert areas. Both subspecies that occur in California, the northwestern pond turtle (*E. m. marmorata*) and the southwestern pond turtle (*E. m. pallida*), are considered by the state of California to be species of special concern. The pond turtle is normally found in and along riparian areas, although gravid females have been reported up to a mile away from water in search of appropriate nest sites. The preferred habitat for these turtles includes ponds or slow-moving water with numerous basking sites (logs, rocks, etc.), food sources (plants, aquatic invertebrates, and carrion), and few predators (raccoons, introduced fishes, and bullfrogs). Juvenile and adult turtles are commonly seen basking in the sun at appropriate sites, although they are extremely wary animals and often dive into the water at any perception of danger.

The CNDDDB (2006) lists two records for the southwestern pond turtle within the quadrangles that overlay the proposed and alternative alignments. Precise location data were not provided for these occurrences; however, occurrence number 149, from 1999, is from the Ritter Ridge and Sleepy Valley quadrangles, and occurrence number 284, from 1995, is from the Ritter Ridge quadrangle. The only location within the Project area that appears to provide suitable habitat for pond turtles is where the proposed alignment crosses Amargosa Creek. However, pond turtles were not observed during a general herpetological reconnaissance survey conducted at this location on June 13, 2006, nor were they observed during focused surveys for California red-legged frogs and arroyo toads conducted there on June 14 and 15, 2006. Nonetheless, pond turtles may be present throughout Amargosa Creek, as well as its associated tributaries and ponds.

Coast Horned Lizard (*Phrynosoma coronatum*). Federal Status: None; State Status: California Species of Special Concern.

The San Diego horned lizard (*P. c. blainvillei*) and California horned lizard (*P. c. frontale*) are two subspecies of the coast horned lizard, both of which are state species of special concern. The two subspecies occupy loose sandy loam and alkaline soils in a variety of habitats including chaparral, grasslands, saltbush scrub, coastal scrub, and clearings in riparian woodlands. They primarily eat insects such as ants and beetles. They once inhabited much of the Central Valley and coastal southern California but have disappeared from much of their former range. Their population decline is mainly attributed to conversion of land for agricultural purposes. The human introduction of non-native Argentine ants, which are inedible to horned lizards and tend to displace the native carpenter ants, is another factor in their decline.

The CNDDDB (2006) lists nine records for the coast horned lizard within the quadrangles that overlay the proposed and alternative alignments. These records date from between 1951 and 2004. All nine occurrences were reported to be the San Diego horned lizard. Coast horned lizards, which occupy a variety of habitats, may occur in almost any upland habitat within the Project area that has not been urbanized or converted to agriculture. The San Diego horned lizard may occur within the southern and central portions of the Project

area, while the California horned lizard may occur within the northern portions. California horned lizards were observed in the Project area.

Two-striped Garter Snake (*Thamnophis hammondi*). Federal Status: None; State Status: Species of Special Concern.

The two-striped garter snake is a slender-bodied snake that grows to approximately three feet (0.9 m) in length. This species is highly aquatic but may move considerable distances into upland habitats, even where permanent water is lacking. Two-striped garter snakes have been observed in riparian, freshwater marsh, coastal sage scrub, chaparral, oak woodland, and grassland habitats. The species is normally active from April to October and may become primarily nocturnal or crepuscular during the summer months. This species preys primarily on fish, fish eggs, and aquatic vertebrates. Populations may be threatened by the presence of numerous exotic species that co-occur with them, including bullfrogs and centrarchid fishes.

The CNDDDB (2006) lists four records for the two-striped garter snake within the quadrangles that overlay the proposed and alternative alignments. These records date from between 1995 and 1999. Two of the four records are from Amargosa Creek. The location within the Project area that appears to provide the best potential habitat for two-striped garter snakes that is also within the range of the species is where the proposed alignment crosses Amargosa Creek. However, two-striped garter snakes were not observed during a general herpetological reconnaissance survey conducted there on June 13, 2006, nor were they observed during focused surveys for California red-legged frogs and arroyo toads conducted there on June 14 and 15, 2006. Nonetheless, two-striped garter snakes may be widely distributed within this drainage, as well as associated tributaries and ponds. It is also possible that this species may occur within the smaller Anaverde Creek system.

Long-eared Owl (*Asio otus*). Federal Status: None; State Status; Species of Special Concern.

The Long-eared Owl is a medium-sized owl that nests in trees and are often found in the non-breeding season in communal roosts in isolated groves of dense trees. They often hunt in grasslands, wet meadows and freshwater marshes where they prey upon amphibians, rodents, reptiles, and small birds. They are generally rare, but widespread throughout much of California. In the Mojave Desert, they nest and roost in desert riparian, isolated oases and densely vegetated canyons, often with juniper and pinyon pine. As with many other owl species, Long-eared Owls begin nesting in the late winter and fledge young by mid-May. They have been documented to nest at Apollo Park near the Project area, but are considered to be a rare breeder in the Antelope Valley. An athel tamarisk grove within the Project area was found to support a post-breeding communal roost of about fifteen owls in June 2006.

Burrowing Owl (*Athene cunicularia*). Federal Listing Status: None; State Listing Status: Species of Special Concern.

The Burrowing Owl is a small, terrestrial owl of open country. Burrowing Owls favor flat, open grassland or gentle slopes and sparse shrubland ecosystems. These owls prefer annual and perennial grasslands, typically with sparse, or nonexistent, tree or shrub canopies. In California, Burrowing Owls are found in close association with California ground squirrels. Owls use ground squirrel burrows for shelter and nesting. Ground squirrels provide nesting and refuge burrows, and maintain areas of short vegetation height, which provide foraging habitat and allow for visual detection of avian predators by Burrowing Owls. In the absence of ground squirrel populations, habitats soon become unsuitable for occupancy by owls. Burrowing Owls are semi-colonial nesters, and group size is one of the most significant factors contributing to site constancy by breeding Burrowing Owls. The nesting season, as recognized by the CDFG, runs from February 1 through August 31. There are several records of Burrowing Owls near the Project area (CNDDDB, 2006) and a nest was

observed within the proposed Project area during the June 2006 survey in the vicinity of Avenue B and 95th Street West.

Loggerhead Shrike (*Lanius ludovicianus*). Federal Status: None; State Status; Species of Special Concern.

This predatory songbird inhabits much of the lower 48 states of the United States of America. They prefer open habitats interspersed with shrubs, trees, poles, fences, or other perches from which they can hunt. Some populations of the Loggerhead Shrike, primarily those in eastern North America, have declined significantly over the last 40 years. Other populations, including those in western North America, appear to be decreasing as well. Even with this trend, Loggerhead Shrikes are still considered a fairly common species in California. Though they are likely to be more common in less disturbed habitats, Loggerhead Shrikes are still found throughout the Antelope Valley and the Mojave Desert. Loggerhead Shrikes were observed within the Project area during the June 2006 survey. Suitable nesting and foraging habitat exists throughout the project site.

LeConte's Thrasher (*Toxostoma lecontei*). Federal Status: None; State Status; Species of Special Concern.

This medium-sized, all light brown bird is a characteristic denizen of open desert scrub habitats and Joshua tree woodlands. These thrashers are common and widespread throughout the Mojave Desert, but their relatively low densities and retiring nature makes them difficult to observe. At least two pairs were observed during the reconnaissance level surveys in June 2006 in the Joshua tree woodland north of Rosamond Boulevard.

Bendire's Thrasher (*Toxostoma bendirei*). Federal Status: None; State Status; Species of Special Concern.

This medium-sized, medium brown bird is a locally rare species in the complex desert scrub habitats and Joshua tree woodlands in the western Mojave Desert. This is the only desert thrasher that is migratory. It retreats from the Mojave Desert during the fall to winter from central Arizona south to northern Mexico. Its occurrence in the western Mojave Desert is irregular and not annual. None were observed during the reconnaissance level surveys in June 2006.

Summer Tanager (*Piranga rubra*). Federal Status: None; State Status; Species of Special Concern.

As the name implies, this tanager is a neotropical migrant that arrives in California in late April. This insectivore and frugivore is also a riparian obligate in the western United States where it prefers large cottonwood trees for nesting. Rare and local in the Mojave Desert region, the nearest breeding locations are in Valyermo southeast of Lancaster and the South Fork of the Kern River to the north. As with the other riparian species mentioned in this document, it may occur in the riparian habitat along Amargosa Creek and Oak Creek within or near the Project area.

Ferruginous Hawk (*Buteo regalis*). Federal Listing Status: None; State Listing Status: Species of Special Concern.

This large raptor inhabits grasslands, shrub steppe, prairies, and to a lesser extent, open agricultural landscapes. It is a rare and local breeder in the extreme northeastern edge of California, but is a widespread winter visitor throughout the Central Valley, and large grassland areas in other interior valleys and desert regions. Rabbits and other rodents are its primary prey. Although greatly outnumbered by the common Red-

tailed Hawks (*Buteo jamaicensis*), this raptor occurs in each winter in the grasslands and agricultural fields throughout the Antelope Valley.

Merlin (*Falco columbarius*). Federal Listing Status: None; State Listing Status: Species of Special Concern.

This small falcon can be found in most open habitats, including open woodlands and coastal estuaries. It does breed in California, but is a widespread winter visitor throughout the state where it preys upon small birds. Although greatly outnumbered by the common American kestrel (*Falco sparverius*), this falcon occurs in each winter in the Antelope Valley.

Short-eared Owl (*Asio flammeus*). Federal Listing Status: None; State Listing Status: Species of Special Concern.

This large owl breeds and forages on small rodents in emergent marshlands and nearby grasslands and fallow fields. It's breeding status and distribution in California varies annually, but in recent years has been largely confined to the northeastern section of the state. In 2005, however, at least two pairs were present during the breeding season at Harper Dry Lake in the Mojave Desert northwest of Barstow. In June 2006, at least one was seen at the Piute Ponds a few miles east of Hwy 14 on Ave D. This species may breed in the Antelope Valley as they have been noted there in previous years during the breeding season in fallow alfalfa fields (Garrett and Molina, 2005). During the winter and migration periods, Short-eared Owls may forage in the alfalfa fields, fallow fields and grasslands in the Project area.

Olive-sided Flycatcher (*Contopus cooperi*). Federal Listing Status: None; State Listing Status: Species of Special Concern.

This large flycatcher is an inhabitant of coniferous forests throughout California. However, it does not breed in pinyon pine or juniper woodlands, and only occurs in the Antelope Valley and the Project area as a spring and fall migrant. During migration through the desert region, this flycatcher is primarily associated with riparian and planted trees. A few may forage in juniper and Joshua tree woodlands and creosote scrub during wet springs when there is abundant insect prey.

American Badger (*Taxidea taxus*). Federal Status: None; State Status: Species of Special Concern.

American badgers are stocky, burrowing mammals that occur in grassland habitats throughout the western United States. They are strong diggers and feed primarily on other burrowing mammals, such as ground squirrels. Badgers are primarily nocturnal. They breed during late summer, and females give birth to a litter of young the following spring.

American badgers have historically been found in the valley and foothills of the Antelope Valley area (CNDDB, 2006). There is potential for American badgers to occur in the Antelope Valley floor, especially in the areas of non-native annual grassland where colonies of California ground squirrels were observed within the Project area.

Tehachapi Pocket Mouse (*Perognathus alticolus inexpectatus*). Federal Status: None; State Status: Species of Special Concern.

The Tehachapi pocket mouse has a bi-colored body with light colored ears, a tri-colored tail and is medium-large in size for the genus. The mouse occurs in arid brush-steppe communities in the Tehachapi Mountains from Tehachapi pass (Kern County) to Mount Pinos (Ventura County) and Elizabeth and Quail lakes (Los Angeles County) in small disjunct populations (Best, 1994). It occupies flat grassy interspaces of Ponderosa

pine forest, Joshua tree, oak savanna, and pinyon-juniper woodland. At lower elevations it occupies chaparral, coastal sage communities, and even non-native annual grassland. Burrows are constructed in sandy soils. Nothing is known about its natural diet, reproduction, or activity but like other *Perognathus*, it likely eats mostly seeds, gives birth in June to August, and is nocturnal. Likely predators include owls, badgers, rattlesnakes, coyote, weasels, skunks, and foxes.

There are several CNDDDB (2006) sightings in the Tehachapi Mountains and one sighting south in the foothills near Elizabeth Lake Road. One CNDDDB record was within the Project area in the Tehachapi Mountains. The Tehachapi pocket mouse may occur in the Joshua tree woodland north of Rosamond Boulevard and in grassy areas of juniper woodland in the Tehachapi Mountains within the Project area.

Southern Grasshopper Mouse (*Onychomys torridus*) and Tulare Grasshopper Mouse (*Onychomys torridus tularensis*). Federal Status: None; State Status: Species of Special Concern.

The southern grasshopper mouse is a stocky bi-colored mouse with a short bi-colored tail. It occurs in alkali desert scrub, and also succulent shrub, wash, and riparian communities in the Lower Sonoran Life Zone of California, Nevada, Arizona, New Mexico, Texas, and New Mexico. The subspecies *Onychomys torridus tularensis* is found in arid valleys and scrub deserts in the southern Joaquin Valley. Tulare grasshopper mice historically occurred from about western Merced County and eastern San Benito County east to Madera County and south to the Tehachapi Range (USFWS, 1998). Currently, their distribution is limited to the western margin of the Tulare basin, including western Kern County, the Carrizo Plain and the Cuyama Valley side of the Caliente Mountains in San Luis Obispo County, the Ciervo-Panoche region in Fresno and San Benito counties, and the Allensworth Natural Area in Tulare County (USFWS, 1998). The other subspecies of grasshopper mouse (*Onychomys torridus Ramona*) is restricted to coastal Southern California with marginal records for Mint Canyon, west of Palmdale, San Fernando, Riverside, Valle Vista, Warner Pass, La Puerta Valley, Jacumba, Santee Mountains, and the mouth of the Tijuana River Valley. Grasshopper mice occupy abandoned burrows of small mammals. Their diet consists many of arthropods, but also pocket mice, salamanders, crayfish, lizards, and frogs. They are nocturnally active year round. Females give birth around May to July and males play a role in caring for the young (McCarty, 1975). Predators include owls, badgers, rattlesnakes, coyote, weasels, skunks, and foxes.

There are two CNDDDB (2006) sightings for the Southern grasshopper mouse in the Mountains bordering the Antelope Valley. One sighting of the subspecies (*Onychomys torridus tularensis*) was about 3 miles (4.8 km) east of the northern portion of the Project area and the other (*Onychomys torridus*) was about 9 miles (14.5 km) southwest of the southern portion of the Project area. There is moderate potential for the Tulare grasshopper mouse to occur in the foothills of the Tehachapi Mountains where desert scrub interfaces with riparian areas even though this may be beyond their current range. The southern grasshopper mouse has a wider distribution and could be in the same areas as the Tulare grasshopper mouse, but also in the foothills of the Traverse Range in the southern portion of the Project area.

Ringtail (*Bassiriscus astutus*). Federal Status: None; State Status: Fully Protected Species.

The ringtail is a fully protected species by state regulations in the state of California. Ringtails are medium-sized mesocarnivores with a slender body and a long, thick black and white ringed tail used when arboreal. Ringtails range throughout California but are rarely found in the Sacramento Valley and the eastern tip of California. Within their range, ringtails inhabit many habitats but are most often found in chaparral, rocky hillsides, and riparian areas. Ringtails den in rock crevices, talus, boulder piles, tree hollows, and underground. They are nocturnal, foraging for arthropods, fruit, birds, and mammals. Their average home range is 90 acres (30 ha). Predators include great horned owls, coyotes, bobcats, and raccoons (*procyon lotor*) (Poglayen-Neuwall and Toweill 1988). Females give birth to 3 to 4 kits in May or June.

There are no CNDDDB records of ringtails in the Antelope Valley; however, because they are so widespread and riparian areas within rocky hillsides occur at the northern (near Oak Creek) and southern (in Ritter Ranch near Pine Creek) portions of the Project area, there is moderate potential for ringtails to occur within the Project area.

Pallid Bat (*Antrozous pallidus*). Federal listing status: None; State listing status: Species of Special Concern.

Pallid bats are pale to light brown in color, and at about 0.84 ounces (24 grams), the Pacific race is one of the state's largest bats. This medium-sized bat occurs throughout much of California and is usually found in open lowlands where it preys upon flightless insects. It prefers roosting in caves and mine tunnels, but buildings and trees may also be used. Coastal colonies commonly roost in deep crevices in rocky outcroppings, in buildings, under bridges, and in hollow trees. Colonies can range from a few individuals to over a hundred and are non-migratory (Barbour and Davis, 1969). Some female/young colonies (typically the coastal subspecies) use their day roost for their nursery as well as hibernacula, while other colonies (typically those in the desert) migrate locally on a seasonal basis (Johnston, 1997). Although crevices are important for day roosts, night roosts often include open buildings, porches, garages, highway bridges, and mines. Pallid bats may travel up to several miles for water or foraging sites if roosting sites are limited. This bat prefers foraging on terrestrial arthropods in dry open grasslands near water and rocky outcroppings or old structures. They may also occur in oak woodlands. Pallid bats are sensitive to human disturbances at roost sites.

Some roosting habitat for pallid bats was observed in the canyons during reconnaissance level surveys. Potential roosting habitat was observed in the Tehachapi Mountains in the north end of the Project area and in the Transverse Range within the south portion of the project site. Foraging habitat was observed near the riparian areas and in areas with bare ground throughout the Antelope Valley.

Townsend's big-eared bat (*Corynorhinus townsendii*). Federal listing status: none; State listing status: Species of Special Concern.

California has two subspecies of Townsend's big-eared bats (*C. t. townsendii* and *C. t. pallescens*), that intergrade at the boundaries of their ranges. Townsend's big-eared bat is a colonial species and females aggregate in the spring at nursery sites known as maternity colonies. Although Townsend's big-eared bat is usually a cave dwelling species, many colonies are found in anthropogenic structures such as the attics of buildings or old abandoned mines. Known roost sites in California include limestone caves, lava tubes, mine tunnels, buildings, and other structures (Williams, 1986). Radio-tracking studies suggest that movement from a colonial roost during the maternity season is confined to within 9 mile (15 km) of the nursery. This species is easily disturbed while roosting in buildings, and females are known to completely abandon their young when disturbed. This species feeds primarily on moths and other soft-bodied insects. Little information is available on the current population of this species in the Antelope Valley. Suitable foraging habitat occurs within the

project boundary; however, significant roost sites (i.e., abandoned mines) are likely to exist within the Project area.

Western Mastiff Bat (*Eumops perotis*). Federal listing status: Federal Species of Concern; State listing status: Species of Special Concern.

Western mastiff bats are the largest of all of North America species of bats with a forearm length of 3.1 to 3.3 inches (73 to 83 mm) and weighing up to 3.5 ounces (100 grams). Mastiff bats can forage at 1,970 to 2,300 feet (600 to 700 m) above ground level and may forage for 7 hours and 15 miles (24.1 km) from their roost. This species roosts primarily in cliffs or high buildings where there is a minimum of 9.8 feet (3 m) of vertical drop at the entrance to roosts. Mastiff bats consume low- and slow-flying hymenopterous insects. This species is found in central and south coastal California, the San Joaquin Valley, the southern half of the Sierra foothills, and throughout desert regions. This species may utilize bridges, rocks, or buildings as night roosts, day roosts or maternity roosts. Suitable habitat was observed in rocky areas of the Tehachapi Mountains and Transverse Range. They forage within the project boundary, and they may also roost in houses in, or outside, the project boundary and under bridges along Highways 58 and 14.

C.3.5 Regulated Habitats

C.3.5.1 U. S. Army Corps of Engineers Jurisdiction

C.3.5.1.1 Survey Results

Portions of Amargosa Creek and Oak Creek are well-defined channels that support ordinary flows. The unnamed creek north of Oak Creek within the Wind Resource Area was not accessible for surveys. Numerous drainages that convey water only during rainstorm events and depressional areas that pond water seasonally occur throughout the Project area. Such habitats possess field characteristics used by the USACE in establishing jurisdiction. However, because the Antelope Valley is an internally drained basin with no connection to navigable waters, the USACE has chosen to disclaim all wetland and drainages of this sort within the basin (Pers. comm. A. Allen, USACE, Los Angeles District, March 26, 2003). Therefore, habitats within Amargosa Creek, Oak Creek, and the unnamed creek are not subject to the regulatory jurisdiction of the USACE.

C.3.5.2 California Department of Fish and Game Jurisdiction

C.3.5.2.1 Survey Results

Approximately 241 acres (98 ha) of riparian habitat are estimated to occur within the Project area, and approximately 0.4 acres (0.16 ha) of desert wash habitat may be impacted within the bed and banks of the creeks, washes, and tributary drainage channels and are potentially subject to the regulatory jurisdiction of the CDFG under Section 1602 of the Fish and Game Code. Both Amargosa Creek and Oak Creek contained regular flows during the June survey period. The unnamed creek could not be surveyed as it was within an inaccessible portion of the Wind Resource Area. The numerous washes and contributing drainages located within the Project area convey water only during and immediately after rain events and are dry for much of the year (Figures C.3-3a and C.3-3b). Robust riparian vegetation is associated with Amargosa Creek and Oak Creek, and included Pacific willow, rabbitsfoot grass (*Polypogon monspeliensis*), cattail, and other riparian and wetland vegetation.

If Amargosa Creek, Oak Creek, the unnamed creek, or any tributary drainage channel or desert wash habitats are impacted by project activities, a Streambed Alteration Agreement from CDFG may be required. Early

consultation with CDFG is recommended as project modification and/or mitigation measures may be necessary and would require the approval of CDFG (See Environmental Impacts section below).

C.3.6 Applicant-Proposed Measures

This section presents the Applicant-Proposed Measures (APMs) designed by SCE to reduce impacts of the proposed Project to biological resources. These APMs are incorporated into the project description and considered part of the proposed Project. APMs are separate from mitigation measures, which are proposed in addition to the project description for the purpose of mitigating significant impacts. If the proposed Project is approved, these measures in addition to the mitigation identified in the EIR would be monitored by the CPUC. Table C.3-6 presents a list of the APMs related to biological resources for the proposed Project.

APM BIO-1	Pre-construction biological clearance surveys would be performed to minimize impacts to special-status plants or wildlife species.
APM BIO-2	Every effort would be made to minimize vegetation removal and permanent loss at construction sites. If necessary, native vegetation would be flagged for protection. A project revegetation plan would be prepared for areas of native habitat temporarily impacted during construction. Joshua trees would be afforded protection under applicable provisions of the California Desert Native Plants Act and the City of Palmdale Code, Chapter 14.04 Joshua Tree and Native Desert Vegetation Preservation.
APM BIO-3	Construction crews would avoid impacting the streambeds and banks of any streams along the route to the extent feasible. If necessary, a Streambed Alteration Agreement (SAA) would be secured from California Department of Fish and Game. Impacts would be mitigated based on the terms of the SAA. No streams with flowing waters and capable of supporting special-status species would be expected to be impacted by the project.
APM BIO-4	Crews would be directed to use Best Management Practices (BMPs) where applicable. These measures would be identified prior to construction and incorporated into the construction operations.
APM BIO-5	Biological monitors would be assigned to the project. The monitors would be responsible for ensuring that impacts to special-status species, native vegetation, wildlife habitat, or unique resources would be avoided to the fullest extent possible. Where appropriate, monitors would flag the boundaries of areas where activities need to be restricted in order to protect native plants and wildlife, or special-status species. These restricted areas would be monitored to ensure their protection during construction.
APM BIO-6	A Worker Environmental Awareness Program (WEAP) would be prepared and all construction crews and contractors would be required to participate in WEAP training prior to starting work on the project. The WEAP training would include a review of the special-status species and other sensitive resources that could exist in the Project area, the locations of the sensitive biological resources, their legal status and protections, and measures to be implemented for avoidance of these sensitive resources. A record of all personnel trained would be maintained.
APM BIO-7	If it was determined that significant and unavoidable impacts occurred to any special-status resources, SCE would purchase lands or otherwise enhance habitat to compensate.
APM BIO-8	SCE would conduct project-wide raptor surveys and remove trees, if necessary, outside of the nesting season (February 1 – August 31). If a tree containing a raptor nest must be removed during the nesting season, or if work is scheduled to take place in close proximity to an active nest on an existing transmission tower or pole, SCE would coordinate with the CDFG and USFWS and obtain written verification prior to moving the nest.
APM BIO-9	All transmission and subtransmission towers and poles would be designed to be raptor-safe in accordance with the Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 1996 (Avian Power Line Interaction Committee, 1996).

C.3.7 Environmental Impacts and Mitigation Measures

The proposed Project could result in temporary disturbance and/or permanent loss to sensitive vegetation communities, rare plant communities, and sensitive plant and animal species. Temporary disturbance may occur during construction of new transmission line structures, construction of new access roads, improvements to existing access roads, and at conductor splicing, staging, or laydown areas. Permanent loss of habitat and

potential long-term impacts may also occur from permanent project features (e.g., new transmission towers and sub-stations) that would remain throughout the life of the Project. Examples of activities that would result in impacts to vegetation communities include:

- Installation of new 500-kV single-circuit steel lattice towers
- Construction of new substation sites and expansion of the Vincent substation
- Construction staging and laydown areas
- Construction and improvement of access and spur roads

Surface disturbance could also occur during the construction, operation, and maintenance phases of the proposed Project and would include:

- Movement of equipment and project personnel for monthly or annual project maintenance
- Movement of equipment and project personnel during line-stringing/cable pulling.

Each of these activities could cause temporary damage to existing vegetation, but would not likely involve removal or substantial disruption of surface soils. The most common type of surface disturbance is associated with rubber-tired or steel-tracked vehicles used to string/pull the line and transport personnel and materials along the proposed ROW. Potential impacts to plant communities could also be caused by the movement of construction/maintenance vehicles and equipment within the proposed Project transmission line ROW. Impacts could include soil compaction and crushing of vegetation. Surveys of areas that would be permanently and temporarily impacted by the proposed Project would be conducted prior to construction.

C.3.7.1 Criteria for Determining Significance

The proposed Project would have a number of effects on the biological resources of the Project site. The California Environmental Quality Act (CEQA) defines “significant effect on the environment” as “a substantial, or potentially substantial, adverse change in the environment” (Pub. Res. Code §21068). Under CEQA Guidelines Section 15065, a project’s effects on biotic resources are deemed significant where the Project would:

- Substantially reduce the habitat of a fish or wildlife species,
- Cause a fish or wildlife population to drop below self-sustaining levels,
- Threaten to eliminate a plant or animal community, and/or
- Reduce the number or restrict the range of a rare or endangered plant or animal.

In addition to the Section 15065 criteria, Appendix G within the CEQA Guidelines lists other potential impacts to consider when analyzing the effects of a project. However, while the statutorily defined criteria above provide guidance, the following criteria are applicable to the assessment of impacts to biological resources stemming from the proposed Project, and provide the basis for determinations of significance:

- Criterion BIO1: Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFG or USFWS.
- Criterion BIO2: Have an adverse effect, either directly or through habitat modifications, on any species listed as endangered, threatened, or proposed or critical habitat for these species.
- Criterion BIO3: Have a substantial adverse effect, either directly or through habitat modifications on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFG, or USFWS.
- Criterion BIO4: Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means.

- Criterion BIO5: Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.
- Criterion BIO 6: Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinances.
- Criterion BIO7: Conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Communities Conservation Plan (NCCP), or other approved local, regional, or state HCP.

C.3.7.2 Impact Analysis

C.3.7.2.1 Impact and Mitigation Summary

This section summarizes the conclusions of the impact analysis and associated mitigation measures presented in Section C.3.7.2.2. Table C.3-7 lists each impact identified for the proposed Project, along with the significance of each impact. Impacts are classified as Class I (significant, cannot be mitigated to a level that is less than significant), Class II (significant, can be mitigated to a level that is less than significant), Class III (adverse, but less than significant), or Class IV (beneficial). Detailed discussions of each impact and the specific locations where each is identified are presented in the following sections.

Impact	Impact Significance	Mitigation Measures*
B-1: Permanent Loss of Non-native Annual Grassland Habitat, and Agricultural and Developed Areas	Class III	None required
B-2: Permanent Loss of Creosote Scrub, Montane Scrub, Desert Scrub, and Saltbush Scrub Habitat	Class III	None required
B-3: Loss of Riparian or Sensitive Desert Wash Resources	Class II	B-3a and B-3b
B-4: Loss of Sensitive Joshua Tree Woodland and Juniper Woodland Habitat and Removal of Joshua Trees and Juniper Trees	Class II	B-4a and B-4b
B-5: Take of California Red-legged Frogs	Class II	B-5a and B-5b
B-6: Take of Desert Tortoises	Class II	B-6a and B-6b
B-7: Disturbance of Nesting Swainson's Hawks	Class II	B-7a and B-7b
B-8: Loss of Foraging Habitat for Swainson's Hawk	Class III	None required
B-9 Disturbance to Nesting Special-Status Riparian Birds	Class II	B-9a and B-9b
B-10: Potential Take of, and Habitat Loss for, Mohave Ground Squirrels	Class II	B-10a through B-10c
B-11: Mortality and/or Disturbance to Mariposa Lily Plant Populations	Class III	None required
B-12: Loss of and/or Disturbance to Short-joint Beavertail	Class II	B-12a through B-12c
B-13: Loss of Montane Scrub/Juniper Woodland Habitats as Habitat for Special-Status Plants	Class II	B-13a through B-13d
B-14: San Emigdio Blue Butterfly Mortality From Construction Disturbance	Class III	None required
B-15: Mortality of, and Loss of Habitat for, Coast Horned Lizards and Silvery Legless Lizards	Class III	None required
B-16: Southwestern Pond Turtle and Two-striped Garter Snake Mortality	Class II	B-16
B-17: Loss of Nesting and Foraging Habitat for Loggerhead Shrikes, Bendire's Thrashers, and LeConte's Thrashers	Class II	B-17
B-18: Disturbance to Wintering Mountain Plovers	Class III	None required
B-19: Loss of Occupied Burrowing Owl Habitat	Class II	B-19a and B-19b
B-20: Disturbance of Nesting Raptors	Class II	B-20a and B-20b
B-21: Electrocution of State and/or Federally Protected Birds	Class III	None required
B-22: Mortality of State and/or Federally Protected Bird Species from Collisions with Project Improvements	Class III	None required
B-23: Mortality of, and Loss of Habitat for, Tehachapi Pocket Mouse, Southern Grasshopper Mouse, and Tulare Grasshopper Mouse	Class III	None required
B-24: Loss of Habitat for Ringtail	Class III	None required
B-25: Mortality of Special-Status Bat Species Due to Electrocution and/or Transmission Line Strikes	Class III	None required

B-26: Loss of Habitat for American Badgers	Class III ; Removal of Active Den (Class II)	None required; Removal of active den (B-26)
B-27: Disturbance to Desert Tortoise Movement as a result of Habitat Modification	Class II	B-27a and B-27b
B-28: Degradation of Water Quality (Indirect)	Class III	None required
B-29: Mortality of Desert Tortoises as a Result of Increased Predation by Common Ravens (indirect)	Class III	None required

* Applicable to significant impacts only (i.e., Class I and Class II).

C.3.7.2.2 Project Impacts and Mitigation Measures

Effects on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by CDFG or USFWS (Criterion BIO1)

Impact B-1: The Project Would Result in the Permanent Loss of Non-native Annual Grassland Habitat, and Agricultural and Developed Areas (Class III)

For the purposes of this analysis, all impacts related to direct ground disturbance during construction within the non-native annual grassland habitat were treated as being permanent in nature; this was done for two reasons. The first reason is that given the current level of design it is not known with absolute certainty what specific post-construction phase treatment the impact areas would receive. Some impacts to this habitat are truly permanent in nature as they include the locations of tower footings, compacted maintenance access roadways, and substations. Alternatively, construction impacts to the non-native annual grassland habitat that are more temporary in nature include the direct removal of plants during grading and subsequent construction in areas that are not used for facilities or used as maintenance roads. Although such areas are not covered by buildings or are compacted as roadways, the clearing and grading operations can alter soil conditions, including the loss of native seed banks and change the topography and drainage of a site such that the capability of the habitat to support native vegetation is impaired. Construction activities may also result in the creation of conditions that are favorable for the invasion of weedy exotic species that prevent the establishment of desirable vegetation and may adversely affect wildlife. Given these potential effects, even though the ground surface of such areas is not covered with specific improvements, the likelihood that the same soil conditions and floristic composition would return is considered minimal, thus, they are treated as a permanent loss. The second reason that all grading impacts are considered permanent is because of the difficulty of revegetation efforts in the desert environment. However, as described above, the SCE would implement Applicant-Proposed Measure BIO-2 (see Table C.3-6, APM BIO-2) and a revegetation plan for areas of native habitat temporarily impacted during construction would be developed in an attempt to minimize such impacts.

Permanent loss of approximately 17.1 acres (6.9 ha) of non-native annual grassland habitat, 5.4 acres (2.2 ha) of agricultural land, and 1.1 acres (0.45 ha) of developed areas would occur as a result of the project-related activities. The relative quality of these habitats has been negatively affected by historic and on-going anthropogenic disturbances including the introduction of intensive agricultural activities and road construction. In this part of the Antelope Valley such disturbed habitats are locally and regionally abundant and in their current ecological condition they provide marginal habitat for native plants and wildlife. Because of the wide distribution of these habitats and their relatively low quality, the permanent loss of these habitats is considered less than significant and no mitigation is required (however, see impacts to Burrowing Owl and Swainson’s Hawk, below).

Option A

The 2.1-mile (3.4 km) portion of Option A that deviates from the proposed Project traverses non-native annual grassland and desert scrub habitat. Impacts to non-native grasslands would be similar to the proposed Project and would be considered less than significant for the reasons stated above (See Impact B-2 for loss of desert scrub).

Option B

The 3.1-mile (4.9 km) portion of Option B that deviates from the proposed Project traverses non-native annual grassland, desert scrub, Juniper scrub, and developed areas. Impacts to non-native grassland and developed areas would be similar to the proposed Project and considered less than significant for the reasons stated above (See Impacts B-2 and B-4 for impacts to desert scrub and juniper woodland, respectively).

Impact B-2: The Project Would Result in the Permanent Loss of Creosote Scrub, Montane Scrub, Desert Scrub, and Saltbush Scrub Habitat (Class III)

Permanent loss of approximately 14.4 acres (5.8 ha) of creosote scrub habitat, 2.7 acres (1.1 ha) of montane scrub habitat, 119.8 acres (48.5 ha) of desert scrub habitat, and 7.4 acres (3.0 ha) of saltbush scrub habitat would occur as a result of the proposed Project. These habitats are locally and regionally abundant: the WMP (BLM 2005) lists 5,683,646 acres (1,900,900 ha) of creosote scrub habitat and 802,701 (268,464 ha) acres of saltbush scrub as occurring within the region. Furthermore, much of this habitat is protected from development regionally as it is under BLM, NPS, USFS, or Department of Defense (DOD) ownership. Loss of these habitats would be less than significant and no mitigation is required (however, see impacts to Mohave ground squirrel below).

Option A

The 2.1-mile (3.4 km) portion of Option A that deviates from the proposed Project traverses non-native annual grassland and desert scrub habitat. As with the proposed Project, impacts to desert scrub would be less than significant for the reasons stated above (See Impact B-1 for loss of non-native grassland).

Option B

The 3.1-mile (4.9 km) portion of Option B that deviates from the proposed Project traverses non-native annual grassland, desert scrub, Juniper scrub, and developed areas. As with the proposed Project, impacts to desert would be less than significant for the reasons stated above (See Impacts B-1 and B-4 for impacts to non-native grassland, developed areas, and juniper woodland, respectively).

Impact B-3: The Project Would Result in the Loss of Riparian or Sensitive Desert Wash Resources (Class II)

Riparian areas occur in several of the proposed Project areas including Amargosa Creek in the south and Oak Creek in the north. In addition, the proposed transmission line crosses a variety of small, unnamed drainages that support small populations of riparian habitat throughout the southern foothill region of the Project area. SCE has indicated that these drainages would be spanned by the high voltage lines and disturbance or removal of riparian communities would not occur. Riparian habitat could be impacted however at Amargosa Creek and other drainages if the expansion of the existing access roads is required. Activities that involve modification of the bed or bank of a State jurisdictional waterway would be regulated by the CDFG, Regional Board, and USACE. SCE has indicated that implementation APM BIO-3, (Obtain a Streambed Alteration Agreement) would reduce impacts to riparian vegetation and no further mitigation is proposed.

~~Activities associated with the construction and on-going maintenance and operation of the proposed Project has the potential to substantially degrade and remove desert wash habitat within the project boundaries and could~~
~~The proposed Project would result in the direct loss of up to 0.4 acres (0.16 ha) of desert wash habitat, a limited resource in the Antelope Valley. Activities associated with the construction and on-going maintenance and operation of the transmission line would substantially degrade and remove desert wash habitat within the project boundaries.~~ Although this unique hydrogeomorphic landform is relatively common in parts of the Antelope Valley, much of this habitat particularly in the central part of the Project area has been lost over the last several decades due to development and agricultural practices (see Cumulative Impact Section). Desert wash habitats can support unique assemblages of plants and wildlife species and it is well documented that they play an important contribution in conveying surface flows during the rainfall season to other habitats located down slope supporting special-status plants such as the alkali mariposa lily. It is because of these factors that loss of desert wash habitat is considered a significant impact (**Class II**). Given the relatively difficult nature of re-creating desert washes the overall approach to mitigation was to avoid through redesign to the extent practicable and where impacts are not avoidable to mitigate through preservation of existing desert wash habitat. Implementation of the following avoidance or mitigation measures would reduce impacts to desert wash resources to less-than-significant levels.

Mitigation Measures for Impact B-3

- B-3a** **Avoid Desert Wash Habitat.** The proposed Project shall be designed to avoid permanent impacts to desert wash habitats. If towers are to be located within desert washes then steps will be taken to relocate these facilities beyond the bed, bank and channel of these habitats. Similarly, access roads that need to cross desert washes will utilize half-arch culverts, steel plates, or any other method that leaves the bottom of the washes untouched and allows for continued conveyance of storm flows. ~~Similarly, access roads that need to cross desert washes will utilize half arch culverts or steel plates in a manner that leaves the bottom of the washes untouched and allows for continued conveyance of storm flows.~~ Alternatively, access roads through the washes will be removed during the first season of construction to replace the pre-project topography in a manner that will not interrupt ephemeral surface flows. In areas where the desert wash habitat cannot be avoided, Mitigation B-3b shall be implemented.
- B-3b** **Preserve Off-site Desert Wash Habitat.** Following final project design, SCE, in cooperation with CDFG and the CPUC, shall assess the area of impact to desert wash resources within the project site. To mitigate impacts to this area, off-site desert wash habitat shall be preserved in perpetuity at a ratio determined by CDFG in a Streambed Alteration Agreement dependent on the nature of disturbance and the quality of the desert wash habitat to be impacted. For example, high quality desert wash habitat would be mitigated for in perpetuity at a ratio of 2:1 (two acres preserved for each acre impacted). ~~To mitigate impacts to this area, off site desert wash habitat shall be preserved in perpetuity at a 2:1 mitigation ratio (two acres preserved for each acre impacted). In other words, 0.8 acres (0.32 ha) of off site habitat would need to be preserved to mitigate for impacts to 0.4 acres (0.16 ha) of desert wash habitat impacted within the Project area.~~

In the event of loss of desert wash habitat, SCE shall work with CDFG and CPUC to identify appropriate mitigation lands and ensure their permanent protection through an appropriate CDFG-approved mechanism, such as a conservation easement or fee title purchase. Mitigation acquisition shall occur at a CDFG-approved location such as the Desert Tortoise Preserve in Kern County and shall be coordinated through a CDFG-approved entity. SCE shall enter into a binding legal agreement regarding the preservation of off-site lands describing the terms of the acquisition, enhancement, and management of those lands. Fee title to acquired habitat lands, or a conservation easement over these lands, shall be transferred to CDFG or to an entity approved by CDFG and

CPUC, along with money for enhancement of the land and an endowment for permanent management of the lands.

Option A

The 2.1-mile (3.4 km) portion of Option A that deviates from the proposed Project does not traverse any riparian or sensitive desert wash areas. However, small unnamed drainages may occur seasonally that support small populations of riparian habitat immediately south of the southern portion of Option A, immediately north of Amargosa Creek. However, impacts to these drainages, if present, would be reduced to less-than-significant levels through implementation of APM BIO-3 as stated above. Furthermore, Option A does not traverse desert wash areas, which are limited to several small areas in Segment 3 south of Oak Creek.

Option B

The 3.1-mile (4.9 km) portion of Option B that deviates from the proposed Project traverses several small, unnamed drainages that may support small populations of riparian habitat throughout the Ritter Ranch area. However, impacts to these drainages, if present, would be reduced to less-than-significant levels through implementation of APM BIO-3 as stated above. Furthermore, Option B does not traverse desert wash areas, which are limited to several small areas in Segment 3 south of Oak Creek.

Impact B-4: The Project Would Result in the Loss of Sensitive Joshua Tree Woodland and Juniper Woodland Habitat and Removal of Joshua Trees and Juniper Trees (Class II)

Permanent loss of approximately 3.4 acres (1.1 ha) of Joshua tree woodland habitat and 13.8 acres (5.6 ha) of juniper woodland habitat would occur as a result of the proposed Project. Such impacts include those associated with ground disturbance from road and tower construction. The West Mojave Habitat Conservation Plan (HCP) states that 28,826 acres (11,665 ha) of Joshua tree woodland and 62,986 (25,490 ha) acres of juniper woodland occur within the West Mojave Desert. Joshua tree and juniper woodland habitats support unique assemblages of plant and wildlife species, and despite the numbers provided in the HCP for existing habitat, vast acreages of these habitats have been lost over the last several decades due to urbanization and agricultural activities in the valley. In general, desert plant communities lack vertical structure and shade, and both of these habitats provide these important habitat characteristics for mammals and avian species. Due to the unique floristic composition of these communities and due to historic and on-going losses, the California Desert Native Plant Act has designated Joshua tree woodland and juniper woodland habitats as sensitive. Any direct loss of these habitats within the project area would be considered a significant impact. Given the relatively difficult nature of re-creating Joshua tree and juniper woodland habitat and moving these species the overall approach to mitigation is to avoid impacts to these plant communities through redesign of tower locations and spur roads. Where avoidance of impacts is not feasible SCE shall mitigate through the preservation of existing Joshua tree and juniper woodland habitats. The City of Palmdale thresholds for impacts to Joshua trees, indicate that the minimum standard for preservation is two Joshua trees per acre, applicable to future utilities. Implementation of the following avoidance or mitigation measures would reduce impacts to either habitat to less-than-significant levels.

Mitigation Measures for Impact B-4

B-4a Avoid Joshua Tree and Juniper Woodland Habitat. The proposed Project activities (construction phase, and operations and maintenance phase) shall be designed to avoid Joshua tree woodland habitat and juniper woodland habitat to the maximum extent feasible. All efforts shall be made, in particular, to avoid individual trees of either species. Any trees that must be impacted shall be

mitigated at a ratio of 2:1 through preservation of existing habitat so that all impacts to these habitats are mitigated on acreage and tree basis as provided below. SCE shall photo document the number of Joshua and juniper trees removed during project construction and provide a letter report to the CPUC and CDFG at the conclusion of construction.

B-4b Preserve Off-site Joshua Tree Woodland and Juniper Woodland Habitat. To mitigate impacts to either habitat, existing offsite Joshua tree woodland habitat and juniper woodland habitat shall be preserved in perpetuity at a 2:1 mitigation ratio (two acres preserved for each acre impacted). The minimum standard for preservation of, or mitigation of, Joshua trees is two Joshua trees per acre.

The SCE shall coordinate with CDFG and CPUC to identify appropriate mitigation lands and ensure their permanent protection through an appropriate CDFG-approved mechanism, such as a conservation easement or fee title purchase. A conservation easement could be held by CDFG or an approved land management entity and would be recorded within a time frame agreed upon by CDFG. SCE shall provide verification of the purchase of mitigation land to the CPUC within 60 days following the conclusion of construction.

Option A

The 2.1-mile (3.4 km) portion of Option A that deviates from the proposed Project traverses several small patches of juniper woodland. Direct loss of this habitat along portions of Option A would be considered a significant impact. However, implementation of the avoidance and mitigation measures identified above would reduce impacts to less-than-significant levels.

Option B

The 3.1-mile (4.9 km) portion of Option B that deviates from the proposed Project traverses several small patches of juniper woodland. Direct loss of this habitat along portions of Option B would be considered a significant impact. However, implementation of the avoidance and mitigation measures identified above would reduce impacts to less-than-significant levels.

Effects on Species Listed as Endangered, Threatened, or Proposed or Critical Habitat for These Species (Criterion BIO2)

Vegetation

All listed and/or proposed plant species considered do not have the potential to occur in the Project area. These species were rejected from consideration due to degraded habitat within the Project area, the lack of associated native species, and/or the absence of specific microhabitat variables such as soil type, elevation, or hydrology (Appendix B). These species include Nevin's barberry, thread-leaved brodiaea, California jewel-flower, slender-horned spineflower, marcescent dudleya, Bakersfield cactus, Lyon's pentachaeta, and San Joaquin adobe sunburst.

Wildlife

Eight listed wildlife species were identified with the potential to occur in the proposed Project area. These include California red-legged frog, desert tortoise, Swainson's hawk, Yellow-billed Cuckoo, Southwestern Willow Flycatcher, Vermilion Flycatcher, Least Bell's Vireo, and Mohave ground squirrel.

Ground-disturbing activity, including tower pad preparation and construction, grading of new access roads, tower removal, and use or improvement of existing access roads has the potential to disturb these species. SCE will implement APMs BIO-1 (Pre-construction Surveys) and BIO-5 (Conduct Biological Monitoring) as part of

the proposed project. However, to reduce impacts to these species to less-than-significant levels SCE will implement the mitigation measures described in detail below.

Impact B-5: The Project Could Result in the Take of California Red-legged Frogs (Class II)

The California red-legged frog is known to occur in San Francisquito Creek and Amargosa Creek in the Leona Valley and has the potential to occur in the proposed Project area at the proposed Amargosa Creek alignment crossing. Although only marginally suitable habitat for California red-legged frogs exists at this location this species may also be present in the headwaters of drainages that occur throughout the region. The creek channel in this area consists of a wet crossing and is currently utilized by SCE for access to the existing transmission line ROW.

California red-legged frogs were not observed during any site visit or focused survey between June 13 and 15, 2006, and it is unlikely that reaches of the drainage near the proposed alignment crossing are occupied by the species on a permanent basis. However, red-legged frogs may utilize these reaches as a movement/dispersal corridor at various times, especially during late winter and early spring. Construction activities occurring within 300 feet (91 m) of Amargosa Creek have the potential to result in “take” (*i.e.*, mortality or injury) of individual California red-legged frogs if present. While SCE will implement applicants proposed mitigation measures BIO-1, BIO-2, BIO-3, BIO-5, and BIO-6 (Table C.3-6) as part of the Proposed Project, if present, take of this federally listed species would constitute a significant impact and would be authorized only through the context of a Biological Opinion issued from the USFWS. However, implementation of the following mitigation measures would avoid take if present, thereby reducing potential impacts to a less-than-significant level.

Mitigation Measures for Impact B-5

B-5a Obtain Technical Assistance from the USFWS for California Red-legged Frogs. The applicants shall request technical assistance from the USFWS to review the potential for California red-legged frogs to occupy Amargosa Creek and obtain concurrence that the applicants proposed measures along with Mitigation Measure B-5b will avoid impacts to this federally threatened species.

B-5b Conduct Focused Surveys for California Red-legged Frog. SCE shall contract with a qualified local biologist to conduct focused surveys for California Red-legged frog at the Amargosa Creek crossing and in all areas that may support this species between February 25 and April 30. If detected in or adjacent to the proposed ROW no work will be authorized within 500 feet of occupied habitat until SCE provides concurrence from the USFWS to the CPUC. If present SCE shall develop and implement a mitigation and monitoring plan that includes the following measures in consultation with the USFWS and CDFG.

- SCE shall retain a qualified biologist with demonstrated expertise with red-legged frogs to monitor all construction activities and assist SCE in the implementation of the monitoring program. This person will be approved by the USFWS prior to the onset of ground-disturbing activities. This biologist will be referred to as the authorized biologist hereafter. The authorized biologist will be present during all activities immediately adjacent to or within habitat that supports populations of red-legged frog.
- Prior to the onset of construction activities, SCE shall provide all personnel who will be present on work areas within or adjacent to the Project area the following information:
 - a. A detailed description of the red-legged frog including color photographs;
 - b. The protection the red-legged frog receives under the Endangered Species Act and possible legal action or that may be incurred for violation of the Act;

c. The protective measures being implemented to conserve the red-legged frogs and other species during construction activities associated with the proposed Project; and

d. A point of contact if red-legged frogs are observed.

- All trash that may attract predators of the red-legged frogs will be removed from work sites or completely secured at the end of each work day.
- Prior to the onset of any construction activities, SCE shall meet on-site with staff from the USFWS and the authorized biologist. SCE shall provide information on the general location of construction activities within habitat of the red-legged frogs and the actions taken to reduce impacts to this species. Because red-legged frogs may occur in various locations during different seasons of the year, SCE, USFWS, and authorized biologists will, at this preliminary meeting, determine the seasons when specific construction activities would have the least adverse effect on red-legged frogs. For example construction during the time of year when red-legged frogs are dormant, October through January (although frogs may remain active year round), would reduce impacts to this species. The goal of this effort is to reduce the level of mortality of red-legged frogs during construction.
- Where construction can occur in habitat where red-legged frogs are widely distributed, work areas will be fenced in a manner that prevents equipment and vehicles from straying from the designated work area into adjacent habitat. The authorized biologist will assist in determining the boundaries of the area to be fenced in consultation with the USFWS/CDFG/CPUC. All workers will be advised that equipment and vehicles must remain within the fenced work areas.
- The authorized biologist will direct the installation of the fence and conduct a minimum of three nocturnal surveys to move any red-legged frogs from within the fenced area to suitable habitat outside of the fence. If red-legged frogs are observed on the final survey or during subsequent checks, the authorized biologist will conduct additional nocturnal surveys if he or she determines that they are necessary in concurrence with the USFWS/CDFG/CPUC.
- Fencing to exclude red-legged frogs will be at least 24 inches in height.
- The type of fencing must be approved by the authorized biologist and the USFWS/CDFG/CPUC.
- Construction activities that may occur immediately adjacent to breeding pools or other areas where large numbers of red-legged frogs may congregate will be conducted during times of the year (winter) when individuals have dispersed from these areas or the species is dormant. The authorized biologist will assist SCE in scheduling its work activities accordingly.
- If red-legged frogs are found within an area that has been fenced to exclude red-legged frogs, activities will cease until the authorized biologist moves the red-legged frogs.
- If red-legged frogs are found in a construction area where fencing was deemed unnecessary, work will cease until the authorized biologist moves the red-legged frogs. The authorized biologist in consultation with USFWS/CDFG/CPUC will then determine whether additional surveys or fencing are needed. Work may resume while this determination is being made, if deemed appropriate by the authorized biologist.
- Any red-legged frogs found during clearance surveys or otherwise removed from work areas will be placed in nearby suitable, undisturbed habitat. The authorized biologist will determine the best location for their release, based on the condition of the vegetation, soil, and other habitat features and the proximity to human activities. Clearance surveys shall occur on a daily basis in the work area.
- The authorized biologist will have the authority to stop all activities until appropriate corrective measures have been completed.
- Staging areas for all construction activities will be located on previously disturbed upland areas designated for this purpose. All staging areas will be fenced.
- To ensure that diseases are not conveyed between work sites by the authorized biologist or his or her assistants, the fieldwork code of practice developed by the Declining Amphibian Populations Task Force will be followed at all times.

- SCE shall restrict work to daylight hours, except during an emergency, in order to avoid nighttime activities when red-legged frogs may be present on the access road. Traffic speed should be maintained at 20 mph or less in the work area.

Option A

The 2.1-mile (3.4 km) portion of Option A that deviates from the proposed Project does not traverse reaches of Amargosa Creek or other drainages near the proposed reach that may be occupied by the species. Furthermore, construction activities associated with Option A would not occur within 300 feet (91 m) of Amargosa Creek, and therefore would not result in “take” (*i.e.*, mortality or injury) of individual California red-legged frogs. No impacts to California red-legged frog would occur.

Option B

The 3.1-mile (4.9 km) portion of Option B that deviates from the proposed Project does not traverse reaches of Amargosa Creek or other drainages near the proposed reach that may be occupied by the species. Furthermore, construction activities associated with Option B would not occur within 300 feet (91 m) of Amargosa Creek, and therefore would not result in “take” (*i.e.*, mortality or injury) of individual California red-legged frogs. No impacts to California red-legged frog would occur.

Impact B-6: The Project Could Result in the Take of Desert Tortoises (Class II)

Focused, non-protocol level surveys for desert tortoise were conducted in portions of the proposed and alternative alignments in which habitat appeared to be suitable for desert tortoise and for which access had been granted. Although the habitat within the area surveyed, dominated by Joshua trees and creosote bush, appeared to be suitable for desert tortoises, no sign of desert tortoises was detected during any focused survey. While no records for desert tortoises exist within the Project area and no sign of their presence was detected during focused surveys, desert tortoises could be present in some Joshua tree woodland- creosote bush scrub habitats within the Project area.

Construction activities may result in “take” (*i.e.*, mortality or injury) of individual desert tortoises during ground disturbance or other activities located within areas designated as “Survey Areas” in the WMP (BLM 2005). While SCE would implement applicant proposed measures BIO-1, BIO-2, BIO-5, and BIO-6 (Table C.3-6) as part of the proposed project, if present, take of this state and federally endangered species would constitute a significant impact and would be authorized only through the context of a Biological Opinion issued from the USFWS and an Incidental Take Authorization from the CDFG. Implementation of the following mitigation measures would avoid take if present, thereby reducing impacts to a less-than-significant level.

Mitigation Measures for Impact B-6

- B-6a Obtain Technical Assistance from the USFWS for Desert Tortoise.** The applicants shall request technical assistance from the USFWS and CDFG to review the potential for desert tortoise to occupy suitable habitat within the Project area and obtain concurrence that the applicants proposed measures along with mitigation measures listed below would avoid impacts to this listed species.
- B-6b Conduct Focused Clearance Surveys in Designated Areas.** SCE shall contract with a qualified ~~local~~ biologist to conduct focused clearance surveys for desert tortoise prior to construction activities located within areas designated in the WMP as desert tortoise “Survey Areas.” Clearance surveys shall follow the USFWS desert tortoise survey protocol, as modified within the WMP. If present SCE shall develop and implement mitigation and monitoring plan that includes the following measures in consultation with the USFWS and CDFG.

- SCE shall retain a qualified biologist with demonstrated expertise with desert tortoise to monitor all construction activities and assist SCE in the implementation of the monitoring program. This person will be approved by the USFWS prior to the onset of ground-disturbing activities. This biologist will be referred to as the authorized biologist hereafter. The authorized biologist will be present during all activities immediately adjacent to or within habitat that supports desert tortoise.
- Prior to the onset of construction activities, SCE shall provide all personnel who will be present on work areas within or adjacent to the Project area the following information:
 - a. A detailed description of the desert tortoise including color photographs;
 - b. The protection the desert tortoise receives under the Endangered Species Act and possible legal action or that may be incurred for violation of the Act;
 - c. The protective measures being implemented to conserve the desert tortoises and other species during construction activities associated with the proposed Project; and
 - d. A point of contact if desert tortoises are observed.
- All trash that may attract predators of desert tortoises will be removed from work sites or completely secured at the end of each work day.
- Prior to the onset of any construction activities, SCE shall meet on-site with staff from the USFWS and the authorized biologist. SCE shall provide information on the general location of construction activities within habitat of the desert tortoises and the actions taken to reduce impacts to this species. Because desert tortoise may occur in various locations during different seasons of the year, SCE, USFWS, and authorized biologists will, at this preliminary meeting, determine the seasons when specific construction activities would have the least adverse effect on desert tortoise. For example construction during the time of year when desert tortoise are dormant would reduce impacts to this species. The goal of this effort is to reduce the level of mortality of desert tortoise during construction.
- Where construction can occur in habitat where desert tortoise are widely distributed, work areas will be fenced in a manner that prevents equipment and vehicles from straying from the designated work area into adjacent habitat. The authorized biologist will assist in determining the boundaries of the area to be fenced in consultation with the USFWS/CDFG/CPUC. All workers will be advised that equipment and vehicles must remain within the fenced work areas. Installation of the fencing and any necessary surveys will be directed and/or conducted by the authorized biologist in concurrence with the USFWS/CDFG/CPUC.
- If desert tortoises are found within an area that has been fenced to exclude the species, activities will cease until the authorized biologist moves the desert tortoises.
- If desert tortoises are found in a construction area where fencing was deemed unnecessary, work will cease until the authorized biologist moves the individual(s). The authorized biologist in consultation with USFWS/CDFG/CPUC will then determine whether additional surveys or fencing are needed. Work may resume while this determination is being made, if deemed appropriate by the authorized biologist.
- Any desert tortoises found during clearance surveys or otherwise removed from work areas will be placed in nearby suitable, undisturbed habitat. The authorized biologist will determine the best location for their release, based on the condition of the vegetation, soil, and other habitat features and the proximity to human activities. Clearance surveys shall occur on a daily basis in the work area.
- The authorized biologist will have the authority to stop all activities until appropriate corrective measures have been completed.
- Staging areas for all construction activities will be located on previously disturbed upland areas designated for this purpose. All staging areas will be fenced.
- SCE shall restrict work to daylight hours, except during an emergency, in order to avoid nighttime activities when desert tortoise may be present on the access road. Traffic speed should be maintained at 20 mph or less in the work area.

Option A

The 2.1-mile (3.4 km) portion of Option A that deviates from the proposed Project does not traverse areas of suitable habitat for the desert tortoise. The species has the potential to occur within Joshua tree woodland habitats and creosote bush located in the northern portions of Segment 3. Therefore, project activities associated with Option A (within non-native grassland and desert scrub) would result in no impact to the species.

Option B

The 3.1-mile (4.9 km) portion of Option B that deviates from the proposed Project does not traverse areas of suitable habitat for the desert tortoise. As stated above, the species has the potential to occur within Joshua tree woodland habitats and creosote bush located in the northern portions of Segment 3. Therefore, project activities associated with Option B (within non-native grassland, desert and juniper scrub, and developed areas) would result in no impact to the desert tortoise.

Impact B-7: The Project Could Result in the Disturbance of Nesting Swainson's Hawks (Class II)

Swainson's Hawk nests were observed in the Project area during the reconnaissance-level survey and several CNDDDB records document past use within or in the vicinity of the Project area. Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes Swainson's Hawks to abandon their nest and/or results in the loss of reproductive effort comprises a significant impact. Implementation of the following mitigation measure would reduce the potential impact from nest disturbance to a less-than-significant level.

Mitigation Measures for Impact B-7

- B-7a Conduct Pre-construction Surveys for Swainson's Hawks.** To assure that nesting Swainson's Hawks are not disturbed by construction activities, a qualified ornithologist shall conduct pre-construction surveys within one mile of the Project area in regions with suitable nesting habitat for Swainson's Hawks. Survey Period I occurs from January 1 to March 20, Period II from March 20 to April 5, Period III from April 5 to April 20, Period IV from April 21 to June 10 (surveys not recommend during this period because identification is difficult as the adults tend to remain within the nest for longer periods of time), and Period V from June 10 to July 30. No fewer than three surveys shall be completed, in at least each of the two survey periods immediately prior to project initiation. If a nest site is found, consultation with CDFG shall be required to ensure project initiation will not result in nest disturbance (see Mitigation B-7b). CDFG recommends that no new disturbances or other project-related activities which may cause nest abandonment or forced fledging be initiated within ¼ mile (.40 km) of an active nest between March 1 and September 15 or until August 15 of a Management Authorization of Biological Opinion is obtained for the project (CDFG, 1994b). CDFG recommends that the buffer zone be increased to ½ mile (.80 km) in nesting areas away from urban development (CDFG, 1994b). These buffer zones may be adjusted as appropriate in consultation with a qualified ornithologist and CDFG.
- B-7b Remove Nest Trees.** Nest trees within the Project area(s) shall not be removed unless avoidance measures are determined to be infeasible. If a nest tree must be removed, a Management Authorization (including conditions to off-set the loss of the nest tree) must be obtained from CDFG. The Management Authorization will specify the tree removal period, generally between October 1 and February 1. If construction or other project related activities which may cause nest abandonment or forced fledging are necessary within the buffer zone, monitoring of the nest site (funded by the applicant) by a qualified biologist shall be required to determine if the nest is abandoned. If the nest

is abandoned, and if the nestlings are still alive, the applicant shall fund the recovery and hacking (controlled release of captive reared young) of nestling(s).

Option A

The 2.1-mile (3.4 km) portion of Option A that deviates from the proposed Project does not traverse suitable habitat for Swainson's hawks, and the species is unlikely to nest in transmission towers or tubular steel poles associated with Option A. Nesting pairs Swainson's Hawks were observed in Segment 3 during reconnaissance-level surveys in the vicinity of alfalfa fields, their primary foraging habitat in the Antelope Valley. Furthermore, these areas of suitable foraging habitat within the Project area are located over 10 miles north of the Option A alignment (See Impact B-8 below). Therefore, construction activities associated with Option A would result in no impact to nesting Swainson's hawks.

Option B

The 3.1-mile (4.9 km) portion of Option B that deviates from the proposed Project traverses does not traverse suitable habitat for Swainson's hawks, and the species is unlikely to nest in transmission towers or tubular steel poles associated with Option B. Areas of suitable foraging habitat within the Project area are located over 10 miles north of the Option B alignment (See Impact B-8 below). Therefore, construction activities associated with Option B would result in no impact to nesting Swainson's hawks.

Impact B-8: The Project Could Result in the Loss of Foraging Habitat for Swainson's Hawk (Class III)

Foraging habitat for Swainson's Hawks includes dry-land and irrigated pasture, alfalfa, fallow fields, low-growing row or field crops, rice land, and cereal grain crops (CDFG, 1994b). The primary foraging habitat for Swainson's Hawk in the Antelope Valley is alfalfa fields that comprise approximately 5.4 acres (2.1 ha) of the impacted footprint within the Project area. Swainson's Hawks may also forage in non-native annual grassland and desert scrub habitats present in the Project area. Two nesting pairs have been documented within ten miles (16 km) of the project site (CNDDDB, 2006; P. Bloom pers. Comm.) and were confirmed during focused surveys in June 2006. However, project implementation would not substantially reduce habitat available for these nesting pairs, restrict the range of the species, or cause their regional populations to drop below self-sustaining levels. Therefore, loss of the relatively small amount of suitable foraging habitat available in the Project area is considered a less-than-significant impact.

Option A

Foraging habitat for Swainson's Hawks includes dry-land and irrigated pasture, alfalfa, fallow fields, low-growing row or field crops, rice land, and cereal grain crops (CDFG, 1994b). The 2.1-mile (3.4 km) portion of Option A (within non-native grassland and desert scrub) that deviates from the proposed Project does not traverse suitable foraging habitat for Swainson's hawks. Therefore, construction activities associated with Option A would result in no impact to Swainson's hawk foraging habitat.

Option B

As mentioned above, foraging habitat for Swainson's Hawks includes dry-land and irrigated pasture, alfalfa, fallow fields, low-growing row or field crops, rice land, and cereal grain crops (CDFG, 1994b). The 3.1-mile (4.9 km) portion of Option B (within non-native grassland, desert and juniper scrub, and developed areas) that deviates from the proposed Project ~~traverses~~ does not traverse suitable foraging habitat for Swainson's hawks.

Therefore, construction activities associated with Option B would result in no impact to Swainson's hawk foraging habitat.

Impact B-9: The Project Could Result in the Disturbance to Nesting Riparian Birds (Class II)

Yellow-billed Cuckoo, Southwestern Willow Flycatcher, Vermilion Flycatcher, and Least Bell's Vireo may potentially nest in the riparian areas along Amargosa Creek and Oak Creek within, or adjacent to, the Project area. However, SCE has indicated that these drainages would be spanned by the high voltage lines and disturbance or removal of riparian communities would not occur. Riparian habitat could be impacted however at Amargosa Creek and other drainages if the expansion of the existing access roads is required. Activities that involve modification of the bed or bank of a State jurisdictional waterway would be regulated by the CDFG, Regional Board, and USACE. SCE has indicated that implementation of APM BIO-3, (Obtain a Streambed Alteration Agreement) would reduce impacts to riparian vegetation and no further mitigation is proposed.

Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes these rare and sensitive species to abandon their nests and/or results in the loss of reproductive effort comprises a significant impact to these listed species. Implementation of the following mitigation measures would reduce the potential impact from nest disturbance to a less-than-significant level.

Mitigation Measures for Impact B-9

B-9a **Avoid Construction During the Breeding Season.** In order to avoid disturbance to nesting Yellow-billed Cuckoo, Southwestern Willow Flycatcher, Vermilion Flycatcher, and Least Bell's Vireo construction activities at Amargosa Creek and Oak Creek shall be avoided during the breeding season (April 15 to August 31).

B-9b **Conduct Pre-construction Surveys at Amargosa Creek Crossing and Oak Creek.** If construction activities must occur during breeding season at the Amargosa Creek crossing and at Oak Creek, in order to assure that nesting special-status bird species will not be disturbed by construction activities, a qualified ornithologist shall conduct protocol-level surveys of the project site and adjacent areas within 500 ft of the Project area for Yellow-billed Cuckoo, Southwestern Willow Flycatcher, Vermilion Flycatcher, or and Least Bell's Vireo. ~~will not be disturbed by construction activities, a qualified ornithologist shall conduct pre-construction surveys of the project site and adjacent areas within 500 ft of the Project area.~~ These surveys shall be conducted during the breeding season (April 15 to August 15). If nests are found during the survey, a 500-ft disturbance-free buffer shall be established in coordination with CDFG. ~~with orange ESA fencing.~~ The Vermilion Flycatcher is a "species of concern". A standardized survey protocol for this species has not been developed. Surveys adequate to detect Vermilion Flycatchers could be conducted in conjunction with the protocol-level surveys for Southwestern Willow Flycatcher and Least Bell's Vireo.

Option A

The 2.1-mile (3.4 km) portion of Option A that deviates from the proposed Project does not traverse reaches of Amargosa Creek or other riparian areas potentially occupied by these species. However, if these species were to occupy portions of the Option A alignment, disturbance would constitute a significant impact. Implementation of Mitigation Measures B-9a and B-9b above would reduce potential impacts to less-than-significant levels.

Option B

The 3.1-mile (4.9 km) portion of Option B that deviates from the proposed Project traverses several small-unnamed drainages south of Amargosa Creek potentially occupied by these species. If these species were to occupy portions of the Option B alignment, disturbance would constitute a significant impact. Implementation of Mitigation Measures B-9a and B-9b above would reduce potential impacts to less-than-significant levels.

Impact B-10: The Project Could Result in the Potential Take of, and Habitat Loss for Mohave Ground Squirrel (Class II)

Construction activities may result in “take” (*i.e.*, mortality or injury) of individual Mohave ground squirrels within suitable habitat in the Project area. Furthermore, project implementation may result in loss of habitat due to both permanent structures and/ or roads, and disturbance from construction activities. Take of this state listed species or loss of habitat would constitute a significant impact without mitigation. Implementation of the following mitigation measures would reduce impacts to less-than-significant levels.

Mitigation Measures for Impact B-10

B-10a Conduct Focused Surveys for Mohave Ground Squirrels. Surveys for Mohave ground squirrels shall be performed in the portion of the Project area containing potential Mohave ground squirrel habitat. These surveys shall be performed by a qualified biologist according to CDFG’s *Mohave Ground Squirrel Survey Guidelines* (January 2003). Surveys for Mohave ground squirrel are performed between March 15 and July 15 using standard live trapping techniques. Three weeks of trapping are required during this time, although trapping will cease once a Mohave ground squirrel is captured or observed. The trapping grids each contain 100 traps arranged in 4 rows of 25 and spaced 35 meters apart, for a total grid length of one-half mile. The length of the Project area is sufficiently long to require approval of a site-specific survey layout by CDFG. The layout proscribed by CDFG shall determine the total number of grids required.

If these surveys obtain positive results for Mohave ground squirrel, or if Mohave ground squirrel presence is assumed within potential habitat, SCE shall obtain incidental take authorization from CDFG. This authorization will likely include mitigation measures B-10b and B-10c below.

B-10b Implement Construction Monitoring and Worker Environmental Awareness Program. To reduce the potential of take of Mohave ground squirrels, and prior to ground disturbing activity, a qualified biologist will deliver a Worker Environmental Awareness Program (WEAP) on the ecology of the Mohave ground squirrel to the construction employees. A qualified biological monitor shall be on site during initial ground disturbing activities. The name and phone number of the biological monitor shall be provided to a CDFG regional representative at least fourteen (14) days before ground disturbing activities. If the biological monitor observes a living Mohave ground squirrel on the construction site and/or determines that a Mohave ground squirrel was killed by project related activities during construction or otherwise found dead, a written report will be sent to CDFG within five (5) calendar days. The report will include the date, time of the finding or incident (if known), location of the carcass and the circumstances (if known). Mohave ground squirrel remains shall be collected and frozen as soon as possible. CDFG shall be contacted as to the ultimate disposition of the remains.

B-10c Preserve Off-site Habitat for Mohave Ground Squirrel. To mitigate potential impacts from project construction, the SCE will acquire habitat occupied by Mohave ground squirrels based on the following ratios previously approved by the CDFG for projects in the region:

- Five acres of off-site habitat supporting Mohave ground squirrels will be preserved for each acre of native creosote bush scrub habitat and Joshua tree woodland habitat within the Kern County Study Area of the Habitat Conservation Area (HCA) delineated in the WMP (Rosamond Boulevard to Oak Creek Road – see habitat description in species account).
- Three acres of off-site habitat supporting Mohave ground squirrels will be preserved for each acre of native creosote bush scrub habitat and Joshua tree woodland habitat outside of the HCA delineated in the WMP (Rosamond Boulevard to Oak Creek Road– see habitat description in species account).
- One acre of off-site habitat supporting Mohave ground squirrels will be preserved for each acre of saltbrush scrub habitat (including inclusions of desert wash) impacted by the project outside of the HCA delineated in the WMP (Rosamond Boulevard to Oak Creek Road– see habitat description in species account).
- One-half acre of off-site habitat supporting Mohave ground squirrels will be preserved for each acre of desert scrub habitat impacted by the project outside of the HCA delineated in the WMP (Rosamond Boulevard to Oak Creek Road– see habitat description in species account).
- No mitigation will occur for agricultural, non-native annual grassland, developed, or compacted barren ground within the Project area

Mitigation acquisition shall occur at a CDFG-approved location such as the Desert Tortoise Preserve in Kern County and shall be coordinated through a CDFG-approved entity. SCE shall enter into a binding legal agreement regarding the preservation of off-site lands describing the terms of the acquisition, enhancement, and management of those lands. Fee title to acquired habitat lands, or a conservation easement over these lands, shall be transferred to CDFG or to an entity approved by CDFG and CPUC, along with money for enhancement of the land and an endowment for permanent management of the lands. If it is determined that Joshua tree woodland and/or Juniper woodland preserved through implementation of mitigation measure B-4b detailed above also supports Mojave ground squirrel populations, these off-site lands can be used to satisfy the requirements of this mitigation measure.

Option A

The Mohave ground squirrel occupies open creosote bush scrub, alkali desert scrub, and Joshua tree woodland in areas with flat to moderate terrain. Two individual Mohave ground squirrels were observed during reconnaissance-level surveys in creosote/Joshua tree woodland and creosote desert scrub habitat in the northern portion of Segment 3. Within the southern Project area, Leona Valley is not considered potential Mohave ground squirrel habitat because the desert scrub habitat comprises sagebrush, rabbitbrush, and juniper with an understory of tall annual grasses; all of which are unsuitable habitats for Mohave ground squirrels. Mohave ground squirrels are also considered to be absent from the native habitats in the vicinity of Vincent. The habitats are dominated by juniper with an understory of non-native annual grasses and forbs, and inclusions of creosote brush. The 2.1-mile (3.4 km) portion of Option A that deviates from the proposed Project does not traverse suitable habitat for the Mohave ground squirrel and is located outside of the species' designated range. Therefore construction activities associated with Option A would result in no impact to the Mohave ground squirrel.

Option B

As with Option A above, the 3.1-mile (4.9 km) portion of Option B that deviates from the proposed Project does not traverse suitable habitat for the Mohave ground squirrel and is located outside of the species'

designated range. Therefore, construction activities associated with Option B would result in no impact to the species.

Have a substantial adverse effect, either directly or through habitat modifications on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFG, or USFWS. (Criterion BIO3)

Impact B-11: The Project Could Result in the Mortality and/or Disturbance to Mariposa Lily Plant Populations (Class III)

From the analysis of the distribution and known habitat preferences of special-status plants, it was determined that four different mariposa lily species have the potential to occur within the project boundaries. These species include alkali mariposa lily, slender mariposa lily, Palmer's mariposa lily, and Plummer's mariposa lily. None of these plants was encountered during field surveys; however, given the ephemeral nature of these plants and due to the limited survey period allowed under the current project schedule, it was concluded by project botanists that absence could not be conclusively determined for these species. Thus, for the current analysis the assumption was made that suitable habitat for these species is present within the Project area and that each of these plants has at least a moderate potential for occurrence and could be affected by the proposed activities.

Three of these species occur within the proposed Project area in habitats that generally do not occur on the valley floor and are not currently threatened by agricultural activities or residential/commercial development. Based on existing land uses and review of the local city general plans; slender mariposa lily and Plummer's mariposa lily occur in scrub or chaparral habitats at higher elevations, while Palmer's mariposa lily occurs within moist montane meadows. Suitable habitat for slender mariposa lily and Plummer's mariposa lily is found only in the foothills in the southern portion of the Project area, in Los Angeles County. Field surveys did not find either species. Suitable habitat for Palmer's mariposa lily exists in the southern foothills and in the northern Tehachapi foothills in mixed scrub and chaparral habitats. One population of Palmer's mariposa lily may have been found in a meadow area in the southern foothill range (Figure C.3-4), but photographs taken of the specimen could not confirm it was the listed species. For these species, impacts will be less-than-significant because of the relatively small disturbance zone in the preferred habitats of these plants; the abundance of these habitats in the Antelope Valley; the relatively sparse distribution of these plants at a population level; and their demonstrated tolerance of soil disturbance.

The fourth species, alkali mariposa lily, is found only in the central portion of the valley, west and southwest of Edwards Air Force Base, in areas that are being rapidly developed and lost to urbanization. This species prefers saline/alkaline flat areas of seasonally moist, heavy clays where few other species can occur. Areas of known populations that were surveyed off of the proposed Project boundary contained seepweed, shadscale, and saltgrass, with many unvegetated bare areas. Other plants, including invasive species (other than possibly Russian thistle), cannot grow in this habitat type and the mariposa lilies, in general, thrive under disturbance.

It is estimated that approximately two towers would be located in this area (approximately 0.4 acres [0.16 ha] of impact). For the alkali mariposa lily, impacts will be less-than-significant.

Option A

The 2.1-mile (3.4 km) portion of Option A that deviates from the proposed Project traverses desert and juniper scrub habitats. Areas in the vicinity of the southern foothills of Segment 2 containing these habitats may provide suitable habitat for slender mariposa lily, Palmer's mariposa lily, and Plummer's mariposa lily. However, impacts to these species would be less-than-significant due to the relatively small disturbance zone in

the preferred habitats of these plants; the abundance of these habitats in the Antelope Valley; the relatively sparse distribution of these plants at a population level; and their demonstrated tolerance of soil disturbance. Furthermore, impacts to alkali mariposa lily would not occur due to the fact that saline/alkaline soils do not occur within Option A.

Option B

As within Option A above, the 3.1-mile (4.9 km) portion of Option B that deviates from the proposed Project traverses desert and juniper scrub habitats. These habitats may provide suitable habitat for slender mariposa lily, Palmer's mariposa lily, and Plummer's mariposa lily. However, impacts to these species would be less-than-significant due to the reasons stated above on Option A. Furthermore, impacts to alkali mariposa lily would not occur due to the fact that saline/alkaline soils do not occur within Option B.

Impact B-12: The Project Could Result in the Loss of and/or Disturbance to Short-joint Beavertail (Class II)

From the analysis of the distribution and known habitat preferences of special-status plants, it was determined that short-joint beavertail has the potential to occur within portions of the Project area. Several individual plants were observed distributed in the southern portion of the Project area (Segment 2, the area between the Vincent substation and the Antelope substation). Given the large study area and limited survey period allowed under the current project schedule, it was concluded by project botanists that there is the potential for this species to occur in other portions of the Project area including the un-surveyed wind farm area. Thus, for the current analysis, the assumption was made that suitable habitat for these species is present within much of the Project area and that the plant could be affected by the proposed activities.

Even though the individual short-joint beavertail plants are extremely sparse throughout these habitats, the potential does exist that they would be affected through ground disturbance activities associated with construction of the proposed new roads and transmission line towers, and associated staging areas. Any impacts to this species resulting from project activities are considered significant. The overall mitigation approach is to conduct future surveys for the short-joint beavertail, to avoid impacts through redesign, and where such impacts are not feasible, to salvage and relocate individual plants in suitable habitat within approximately 200 feet of the impact area. Impacts to short-joint beavertail may be reduced to a less-than-significant level through implementation of the following mitigation measures.

Mitigation Measures for Impact B-12

B-12a Conduct Focused Surveys for Short-joint Beavertail. Floristic surveys shall be conducted for short-joint beavertail. It is a perennial cactus and as such, is easily detected once tower and road positions are staked. These surveys will be limited to suitable habitat within proposed transmission line access roads and towers and in any temporary, associated staging areas. The surveys shall be initiated prior to any ground disturbance.

B-12b Avoid Impacts to Short-joint Beavertail. The proposed roadways, towers, and temporary construction staging areas shall be situated to avoid impacts to short-joint beavertail individuals, to the extent practicable. In some cases, individual plants could be transplanted to adjacent habitat, provided that SCE adheres to the monitoring plan listed in mitigation measure B-11c.

Short-joint beavertail occurrences located within temporary construction areas shall be fenced or flagged for avoidance prior to construction, and a biological monitor shall be present to ensure compliance with off-limits areas.

B-12c Remove and Reintroduce Short-joint Beavertail. Prior to grading, a qualified biologist shall develop a short-joint beavertail removal and reintroduction plan for any impacted plants. This plan shall include a map of impacted plants, a suitable method of removal of the species, detailed planting instructions for optimal survival of the transplanted individual, and a map of the transplant location within 200 feet of the impact area and within the same habitat type in which the plant was originally growing. This plan shall be approved by CDFG and CPUC prior to the issuance of grading permits.

Option A

Suitable habitat for the short-joint beavertail is present within the 2.1-mile (3.4 km) portion of Option A that deviates from the proposed Project. The potential does exist that the species would be affected through ground disturbance activities associated with construction of the proposed new roads and transmission line towers, and associated staging areas within Option A. Any impacts to this species resulting from project activities are considered significant. However, implementation of Mitigation Measures B-12a through B-12c would reduce impacts to this species to less-than-significant levels.

Option B

Suitable habitat for the short-joint beavertail is present within the 3.1-mile (4.9 km) portion of Option B that deviates from the proposed Project. As with Option A above, the potential does exist that the species would be affected through ground disturbance activities associated with construction of the proposed new roads and transmission line towers, and associated staging areas within Option B. Any impacts to this species resulting from project activities are considered significant. However, implementation of Mitigation Measures B-12a through B-12c would reduce impacts to this species to less-than-significant levels.

Impact B-13: The Project Could Result in the Loss of Montane Scrub/Juniper Woodland Habitats as Habitat for Special-Status Plants (Class II)

From the analysis of the distribution and known habitat preferences of special-status plants, it was determined that four other special-status plant species have the potential to occur within the Project area. These species include the San Gabriel bedstraw, golden violet, San Gabriel oak, Pierson's morning glory, and white-bracted spineflower.

- San Gabriel Bedstraw could occur in open chaparral or montane scrub habitats, within Los Angeles County, in the southern portion of the proposed Project area.
- Golden violet could occur in the northern portion of the Project area in desert scrub and juniper woodland habitat types. There is one CNDDB record for this species near Highway 14.
- San Gabriel Oak could occur within chaparral in the montane scrub habitat in the southern foothills, within Los Angeles County.
- Pierson's morning-glory could occur in the southern portion of the Project area within chaparral in montane scrub habitat and in desert scrub and non-native, annual grassland habitat types.
- White-bracted spineflower could occur in the southern portion of the Project area within the juniper woodland and desert scrub habitat types.

None of these plants was encountered during field surveys; however, given the ephemeral nature of several of these plants and due to the limited survey period allowed under the current project schedule, it was concluded by project botanists that absence could not be conclusively determined for these species. Thus, for the current analysis the assumption was made that suitable habitat for these species is present within the Project area and that each of these plants has at least a moderate potential for occurrence and could be affected by the proposed Project. The preferred habitats and most likely location of extant populations of these plants is within the montane scrub, juniper woodland, and chaparral habitats located in the southern portion of Segment 2 in the

vicinity of Ritter Ranch and the Vincent Substation. For clarification, loss of chaparral within montane scrub habitat, while not significant as a loss of such habitats when considering the effects on the dominant plant species of these habitats or impacts on wildlife species (as described above) are, however, considered significant as habitats capable of supporting special-status plants.

For each of these species, project activities including construction of proposed new roads and transmission line towers, and associated staging areas in suitable habitat would constitute a significant impact. Given that the work activities would span several months and most of these species, with the exception of the San Gabriel Oak, occur only once every several years and generally for only a few months, a mitigation measure involving pre-construction surveys and avoidance is only feasible for the oak species. Also, given the relatively difficult nature of growing and/or relocating San Gabriel oak trees, the overall approach to mitigation for this species was to avoid through redesign to the extent practicable and where avoidance of impacts is not feasible to mitigate through preservation of San Gabriel oak habitat. The overall mitigation approach is not to propose protocol-level surveys within suitable habitat for most of these plants, but to assume presence, to minimize impacts to their preferred habitat (montane scrub, juniper woodland and chaparral habitats), and to mitigate impacts on a habitat basis by preservation of an equal acreage of the habitats listed above. Impacts to these species would be reduced to a less-than-significant level through implementation of Mitigation Measures B-13a through B-13d.

Mitigation Measures for Impact B-13

B-13a Conduct Focused Surveys for the San Gabriel Oak. Floristic surveys shall be conducted for San Gabriel oak. It is a perennial tree and as such, is easily detected once tower and road positions are staked out. These surveys will be limited to suitable habitat within proposed transmission line access roads and towers and in any temporary, associated staging areas; the surveys shall be initiated prior to any ground disturbance.

B-13b Avoid Impacts to the San Gabriel Oak. The proposed roadways, towers, and temporary construction staging areas shall be situated to avoid impacts to the San Gabriel oak trees. In some cases, individual plants could be transplanted to adjacent habitat, provided that SCE adheres to the monitoring plan listed in Mitigation Measure B-13d.

San Gabriel oak trees located within temporary construction areas shall be fenced or flagged for avoidance prior to construction, and a biological monitor shall be present to ensure compliance with off-limits areas.

B-13c Minimize impacts to Montane Scrub and Juniper Woodland Habitats. The proposed roadways, towers, and temporary construction staging areas shall be situated to minimize ground disturbance activities within the montane scrub, juniper woodland, and chaparral habitats.

B-13d Preserve Off-site Montane Scrub and Juniper Woodland Habitats. To mitigate impacts to these habitats, existing offsite montane scrub (including chaparral) and juniper woodland habitats shall be preserved in perpetuity at a 1:1 mitigation ratio (one acre preserved for each acre impacted).

The SCE shall work with CDFG to identify appropriate mitigation lands and ensure their permanent protection through an appropriate CDFG-approved mechanism, such as a conservation easement or fee title purchase. A conservation easement could be held by CDFG or an approved land management entity and shall be recorded within a time frame agreed upon by CDFG.

Option A

Suitable habitat for the San Gabriel bedstraw, golden violet, San Gabriel oak, Pierson's morning glory, and white-bracted spineflower is present within or in the vicinity of the 2.1-mile (3.4 km) portion of Option A that

deviates from the proposed Project. The potential does exist that these species would be affected through ground disturbance activities associated with construction of the proposed new roads and transmission line towers, and associated staging areas within Option A. Impacts to this species resulting from project activities are considered significant. However, implementation of Mitigation Measures B-13a through B-13d would reduce impacts to this species to less-than-significant levels.

Option B

Suitable habitat for the San Gabriel bedstraw, golden violet, San Gabriel oak, Pierson's morning glory, and white-bracted spineflower is present within or in the vicinity of the 3.1-mile (4.9 km) portion of Option B that deviates from the proposed Project. As with Option A above, The potential does exist that these species would be affected through ground disturbance activities associated with construction of the proposed new roads and transmission line towers, and associated staging areas within Option B. Impacts to this species resulting from project activities are considered significant. However, implementation of Mitigation Measures B-13a through B-13d would reduce impacts to this species to less-than-significant levels.

Impact B-14: The Project Could Result in the San Emigdio Blue Butterfly Mortality from Construction Disturbance (Class III)

Construction activities may create dust that would impact nectar sources of the San Emigdio Blue butterfly and may cause direct mortality to the butterfly and its larvae along Amargosa Creek and the adjacent ridges. Because potential habitat for this species is confined to only a few locations, the loss of habitat and individual butterflies would be considered a significant impact. However, SCE will avoid (when feasible) the bed and banks of Amargosa Creek, and implement of dust control measures, best management practices, and APMs (Table C.3-6) as part of the Proposed Project, and no further mitigation will be required.

Option A

The 2.1-mile (3.4 km) portion of Option A that deviates from the proposed Project is located less than one mile (1.6 km) northeast of the location of where the species was observed during reconnaissance level surveys in June 2006. Several males were observed at nectar sources on the ridge top above Amargosa Creek in the Project area. Potential habitat for these species is limited to only a few locations in close proximity to Amargosa Creek, however any impact to the species would be considered significant without appropriate mitigation. Construction activities associated with Option A would occur north of riparian areas associated with Amargosa Creek, however ground disturbance and dust generated from these activities would impact the species and/or its habitat. As with the proposed Project, SCE will avoid (when feasible) the bed and banks of Amargosa Creek, and implement of dust control measures, best management practices, and APMs (Table C.3-6) as part of the Proposed Project, and no further mitigation will be required.

Option B

The 3.1-mile (4.9 km) portion of Option B that deviates from the proposed Project is located approximately two miles (3.2km) south of the location of where the species was observed during reconnaissance level surveys. Any impact to the species would be considered significant without appropriate mitigation. Construction activities associated with Option B would occur south of riparian areas associated with Amargosa Creek, however ground disturbance and dust generated from these activities would impact the species and/or its habitat. As with the proposed Project, SCE will avoid (when feasible) the bed and banks of Amargosa Creek, and implement dust control measures, best management practices, and APMs (Table C.3-6) as part of the Proposed Project, and no further mitigation will be required.

Impact B-15: The Project Could Result in the Mortality of, and Loss of Habitat for, Coast Horned Lizards and Silvery Legless Lizards (Class III)

Two state species of special concern, the coast horned lizard and silvery legless lizard, may occur across a wide range of undeveloped habitats throughout the Project area. Construction activities may result in injury or mortality to a few individuals of these species. The total losses to either species that may occur, while expected to be small in number, would also be distributed over a relatively large area. Thus, losses sustained by local populations as a result of construction activities are expected to be quite low and would have little effect on either the local or regional population dynamics of these species. Therefore, impacts to coast horned lizards and silvery legless lizards resulting from injury or mortality would be adverse but less than significant.

Permanent habitat losses resulting from project construction are, likewise, relatively uniformly distributed over a large area, and habitat losses at any given site would be relatively low. Thus, habitat losses sustained by local populations as a result of construction activities are expected to have little effect on either the local or regional population dynamics of these species. Therefore, impacts to coast horned lizards and silvery legless lizards resulting from permanent loss of habitat are less than significant.

Option A

The 2.1-mile (3.4 km) portion of Option A that deviates from the proposed Project traverses suitable habitat for the coast horned lizard and silvery legless lizard, and the species may occur within areas designated for construction activities. However, direct mortality and /or loss habitat for these species locally as a result of construction activities are expected to be less-than-significant and would have little effect on either the local or regional population dynamics of these species. Therefore, impacts to coast horned lizards and silvery legless lizards resulting from injury or mortality associated with Option A are adverse but less than significant.

Option B

The 3.1-mile (4.9 km) portion of Option B that deviates from the proposed Project traverses suitable habitat for the coast horned lizard and silvery legless lizard, and the species may occur within areas designated for construction activities. However, as with Option A and the proposed Project, direct mortality and /or loss habitat for these species locally as a result of construction activities are expected to be less-than-significant and would have little effect on either the local or regional population dynamics of these species. Therefore, impacts to coast horned lizards and silvery legless lizards resulting from injury or mortality associated with Option B are adverse but less than significant.

Impact B-16: The Project Could Result in Southwestern Pond Turtle and Two-striped Garter Snake Mortality (Class II)

The southwestern pond turtle and two-striped garter snake, both state species of special concern, are likely to occur only within, or in the vicinity of, permanent aquatic habitat. Within the Project area, southwestern pond turtles are only likely to be present where the proposed alignment crosses Amargosa Creek. The Amargosa Creek location may also be occupied by two-striped garter snakes, and, though less likely, this species could also occur where the proposed and alternative alignments cross Anaverde Creek. At the Anaverde Creek site, where two-striped garter snakes could be present but southwestern pond turtles are unlikely to occur, construction activities could result in injury or mortality to a few two-striped garter snakes. However, at the Anaverde Creek site, where no biological monitor would be present, work would be confined to a relatively small area, and no construction activities would occur within the stream channel. Although construction activities could result in injury or mortality to a few individuals of these species, such losses are unlikely to occur due to the implementation of take avoidance measures for the California red-legged frog (see above),

which would also avoid take of southwestern pond turtles and two-striped garter snakes that may be present. However, impacts to these species associated with project implementation are significant. While SCE will implement APMs BIO-1, BIO-2, BIO-3, BIO-5, and BIO-6 (Table C.3-6) as part of the Proposed Project, to ensure avoidance of take, and reduce impacts to less-than-significant levels, SCE will implement Mitigation Measure B-16 below.

Mitigation Measures for Impact B-16

B-16 Conduct Focused Surveys for Southwestern Pond Turtle and Two-Striped Garter Snake. SCE shall contract with a qualified local biologist to conduct focused surveys for southwestern pond turtles and two-striped garter snakes in all areas that may support these species. If detected in or adjacent to the proposed ROW no work will be authorized within 500 feet of occupied habitat until SCE provides concurrence from the CDFG to the CPUC. If present SCE shall develop and implement a monitoring plan in consultation with the CDFG which would include the following:

- SCE shall retain a qualified biologist with demonstrated expertise with southwestern pond turtles and two-striped garter snakes to monitor all construction activities in the vicinity of water crossings and assist SCE in the implementation of the monitoring program. This person will be approved by the CDFG prior to the onset of ground-disturbing activities. The authorized biologist will be present during all activities immediately adjacent to or within aquatic or terrestrial habitat that supports populations of southwestern pond turtles and two-striped garter snakes. If the species are detected during surveys, the authorized biologist will coordinate with CDFG to remove individuals from the construction zone to suitable habitat.

Option A

The 2.1-mile (3.4 km) portion of Option A that deviates from the proposed Project does not traverse permanent aquatic habitat. However, Amargosa Creek is located less than one mile (1.6 km) south of the Option A alignment, and therefore, while unlikely, southwestern pond turtle and two-striped garter snakes may occur in the vicinity of areas designated for construction activities. Impacts to these species would be significant and to ensure avoidance of take, implementation of Mitigation Measure B-16 discussed above for the proposed Project would be implemented to reduce potential impacts to a less-than-significant level.

Option B

The 3.1-mile (4.9 km) portion of Option B that deviates from the proposed Project traverses several small drainages and is located less than one mile (1.6 km) south of Amargosa Creek. Therefore, as with Option A, southwestern pond turtle and two-striped garter snakes may occur in the vicinity of areas designated for construction activities. Impacts to these species would be significant and to ensure avoidance of take, implementation of Mitigation Measure B-16 discussed above for the proposed Project and Option A would be implemented to reduce potential impacts to a less-than-significant level.

Impact B-17: The Project Could Result in the Loss of Nesting and Foraging Habitat for Loggerhead Shrikes, Bendire's Thrashers, LeConte's Thrashers, and Summer Tanagers (Class II)

Loggerhead Shrikes and LeConte's Thrashers were observed during the reconnaissance-level survey and could nest within the Project area. Although Bendire's Thrashers have not been documented in the Project area, suitable habitat is present within desert scrub and Joshua tree woodland habitat in the Project area. Breeding and foraging habitat for these species within desert scrub and Joshua tree woodlands is regionally abundant. Furthermore, project implementation would not substantially reduce habitat available for these species, restrict their range, or cause their regional populations to drop below self-sustaining levels. Construction disturbance

during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort would constitute a significant impact. The following mitigation measure would reduce potential impacts to a less-than-significant level.

Mitigation Measure for Impact B-17

B-17 Conduct Pre-construction Surveys and Monitoring for Breeding Birds. SCE shall conduct pre-construction surveys for nesting birds if construction and removal activities are scheduled to occur during the breeding season for raptors and other migratory birds. Surveys shall be conducted in areas within 500 feet of tower sites, laydown/staging areas, substation sites, and access road/spur road locations. SCE shall be responsible for designating a qualified biologist who can conduct pre-construction surveys and monitoring for breeding birds. If nests are found during the survey, a disturbance-free buffer shall be established in coordination with CDFG. ~~If breeding birds with active nests are found, a biological monitor shall establish a 500-foot buffer around the nest and no activities will be allowed within the buffer until the young have fledged from the nest or the nest fails.~~ The biological monitor shall conduct regular monitoring of the nest to determine success/failure and to ensure that project activities are not conducted within the ~~500-foot~~ buffer until the nesting cycle is complete or the nest fails.

Option A

The 2.1-mile (3.4 km) portion of Option A that deviates from the proposed Project traverses desert scrub habitats providing breeding and foraging habitat for Loggerhead Shrikes, Bendire's Thrashers, LeConte's Thrashers, and Summer Tanagers. While breeding and foraging habitat for these species is regionally abundant, construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort would constitute a significant impact. Implementation of Mitigation Measure B-17 (Conduct Pre-construction Surveys and Monitoring for Breeding Birds) would ensure that impacts to these species are reduced to a less-than-significant level.

Option B

The 3.1-mile (4.9 km) portion of Option B that deviates from the proposed Project traverses desert scrub habitats providing breeding and foraging habitat for Loggerhead Shrikes, Bendire's Thrashers, LeConte's Thrashers, and Summer Tanagers. Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort would constitute a significant impact. However, as stated above, implementation of Mitigation Measure B-17 (Conduct Pre-construction Surveys and Monitoring for Breeding Birds) would ensure that impacts to these species are less than significant.

Impact B-18: The Project Could Result in the Disturbance to Wintering Mountain Plovers (Class III)

Construction activities may temporarily disturb wintering flocks of Mountain Plovers, thereby forcing individuals to use suboptimal foraging habitat. However, suitable foraging habitat is regionally abundant in the Antelope Valley and project implementation would not substantially reduce habitat available for these species, restrict their range, or cause their regional populations to drop below self-sustaining levels. Therefore, temporary disturbance to wintering Mountain Plovers is considered less than significant. ~~Impacts to nesting plovers would be avoided altogether through the implementation of Mitigation Measure B-17 (Conduct Pre-construction Surveys and Monitoring for Breeding Birds).~~

Option A

The 2.1-mile (3.4 km) portion of Option A that deviates from the proposed Project traverses non-native grassland areas that provide foraging habitat for wintering flocks of mountain plover. However, as stated above suitable foraging habitat is regionally abundant, and construction activities associated with Option A would not substantially reduce habitat available for these species, restrict their range, or cause their regional populations to drop below self-sustaining levels. Therefore, temporary disturbance to wintering Mountain Plovers associated with Option A is considered less than significant.

Option B

The 3.1-mile (4.9 km) portion of Option B that deviates from the proposed Project traverses non-native grassland areas that provide foraging habitat for wintering flocks of mountain plover. However, for the reasons stated above in temporary disturbance to wintering Mountain Plovers associated with Option B is considered less than significant.

Impact B-19: The Project Could Result in the Loss of Occupied Burrowing Owl Habitat (Class II)

Burrowing Owls were observed in the Project area during the reconnaissance-level survey and there are several CNDDDB records within, or in the vicinity of, the Project area. Suitable Burrowing Owl habitat occurs in much of the Project area on the valley floor. If Burrowing Owls are present within a construction zone, or adjacent to such an area, disturbance could destroy occupied burrows or cause owls to abandon burrows. Construction during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. The loss of occupied Burrowing Owl habitat (habitat known to have been occupied by owls during the nesting season within the past 3 years) or reductions in the number of this rare species within the Western Mojave Desert, directly or indirectly through nest abandonment or reproductive suppression, would constitute a significant impact. Furthermore, raptors, including owls and their nests, are protected under both federal and state laws and regulations, including the Migratory Bird Treaty Act and California Fish and Game Code section 3503.5 (see “Disturbance of Nesting Raptors” below). Implementation of the following mitigation measures would reduce the potential impact on this species to a less-than-significant level.

Mitigation Measures for Impact B-19

B-19a Implement CDFG Protocol for Burrowing Owls. In conformance with federal and state regulations regarding the protection of raptors, a habitat assessment in accordance with CDFG protocol for Burrowing Owls shall be completed prior to the start of construction. Burrowing Owl habitat within the Project area and within a 500-foot (150 m) buffer zone shall be assessed (“Assessment Area”). If the habitat assessment concludes that the Assessment Area lacks suitable Burrowing Owl habitat, no additional action would be warranted. However, if suitable habitat is located on the Assessment Area, all ground squirrel colonies, rabbit and badger dens, or other man-made or natural cavities shall be mapped at an appropriate scale, and the following mitigation measures shall be implemented:

- In conformance with federal and state regulations regarding the protection of raptors, a pre-construction survey for Burrowing Owls, in conformance with CDFG protocol, shall be completed no more than 30 days prior to the start of construction within suitable habitat at the project site(s) and buffer zone(s). Three additional protocol-level surveys shall also be completed per CDFG protocol prior to construction.
- Occupied burrows shall not be disturbed during the nesting season (February 1 through August 31) unless a qualified biologist approved by CDFG verifies through non-invasive methods that either: 1)

the birds have not begun egg-laying and incubation; or 2) that juveniles from the occupied burrows are foraging independently and are capable of independent survival. Eviction outside the nesting season may be permitted pending evaluation of eviction plans and receipt of formal written approval from the CDFG authorizing the eviction.

- A 250-foot (76 m) buffer, within which no activity will be permissible, will be maintained between project activities and nesting Burrowing Owls during the nesting season. This protected area will remain in effect until August 31, or at the CDFG's discretion and based upon monitoring evidence, until the young owls are foraging independently.
- If accidental take (disturbance, injury, or death of owls) occurs, the CDFG/CPUC lead monitor will be notified immediately.

B-19b Compensate for Loss of Burrowing Owl Habitat. If surveys determine that Burrowing Owls occupy the site and avoiding development of occupied areas is not feasible, then habitat compensation on off-site mitigation lands shall be implemented. Habitat Management (HM) lands comprising existing Burrowing Owl foraging and breeding habitat shall be acquired and preserved if required by the CDFG. An area of 6.5 acres (2.6 ha) (the amount of land found to be necessary to sustain a pair or individual owl) shall be secured for each pair of owls, or individual in the case of an odd number of birds. As part of an agreement with the CDFG, the project applicant shall secure the performance of its mitigation duties by providing the CDFG with security in the form of funds that would:

- Allow for the acquisition and/or preservation of 6.5 acres (2.6 ha) of HM lands;
- Provide initial protection and enhancement activities on the HM lands, potentially including, but not limited to, such measures as fencing, trash clean-up, artificial burrow creation, grazing or mowing, and any habitat restoration deemed necessary by CDFG;
- Establish an endowment for the long-term management of the HM lands; and
- Reimburse the CDFG for reasonable expenses incurred as a result of the approval and implementation of this agreement.

Option A

The 2.1-mile (3.4 km) portion of Option A that deviates from the proposed Project traverses non-native grassland areas that provide suitable nesting and foraging habitat for burrowing owls. Therefore, construction activities associated with Option A may cause disturbance to the species, could destroy occupied burrows, or cause owls to abandon burrows constituting a significant impact to the species. However, as with the proposed Project, implementation of Mitigation Measures B-19a (Implement CDFG Protocol) and B-19b (Compensation for Loss of Burrowing Owl Habitat) would reduce significant impact to less-than-significant levels.

Option B

The 3.1-mile (4.9 km) portion of Option B that deviates from the proposed Project traverses non-native grassland areas that provide suitable nesting and foraging habitat for burrowing owls. Therefore, construction activities associated with Option A may cause disturbance to the species, could destroy occupied burrows, or cause owls to abandon burrows constituting a significant impact to the species. However, as with the proposed Project, implementation of Mitigation Measures B-19a (Implement CDFG Protocol) and B-19b (Compensation for Loss of Burrowing Owl Habitat) would reduce impacts to less-than-significant levels.

Impact B-20: The Project Could Result in the Disturbance of Nesting Raptors (Class II)

Swainson's Hawks, Burrowing owls, White-tailed kites, and several other raptor species are known, or are expected, to nest in the vicinity of the Project area. Raptors (*e.g.*, eagles, hawks, and owls) and their nests are

protected under both federal and state law. Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered a “taking” by the CDFG. Loss of fertile raptor eggs or nesting raptors, or any activities resulting in raptor nest abandonment, would constitute a significant impact if the species is particularly rare in the region. Construction activities such as tree removal, site grading, etc., that disturb a nesting raptor on-site or immediately adjacent to the construction zone could constitute a significant impact. The mitigation measures described below would reduce significant impacts to less-than-significant levels.

Mitigation Measures for Impact B-20

B-20a Avoid Nesting Season for Raptors. To the extent practicable, construction shall be scheduled to avoid the nesting season for raptor species, which extends from January through August.

B-20b Conduct Pre-construction Surveys for Nesting Raptors. If it is not possible to schedule construction between August and January, then one of the following options shall be implemented:

- With the approval of the CDFG, trees containing known or potential raptor nest sites may be removed to discourage future nesting attempts on the condition that no raptor pair is currently utilizing the site; or,
- Pre-construction surveys for nesting raptors shall be conducted by a qualified ornithologist or wildlife biologist to ensure that no raptor nests will be disturbed during project implementation. A pre-construction survey shall be conducted no more than 14 days prior to the initiation of demolition/construction activities during the early part of the breeding season (January through April) and no more than 30 days prior to the initiation of these activities during the late part of the breeding season (May through August). During this survey, the qualified person shall inspect all trees in and immediately adjacent to the impact areas for raptor nests. If an active raptor nest is found close enough to the construction area to be disturbed by these activities, the ornithologist, in consultation with CDFG, shall determine the extent of a construction-free buffer zone to be established around the nest.

Option A

Swainson’s Hawks, Burrowing owls, White-tailed kites, and several other raptor species may nest in the vicinity of the 2.1-mile (3.4 km) portion of Option A that deviates from the proposed Project. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered a “taking” by the CDFG, and construction activities associated with Option A such as tree removal, site grading, etc., that disturb a nesting raptor on-site or immediately adjacent to the construction zone would constitute a significant impact. However, as with the proposed Project, implementation of Mitigation Measures B-20a (Avoid Nesting Season) and B-20b (Pre-construction Surveys for Nesting Raptors) would reduce significant impacts to less-than-significant levels.

Option B

As with Option A, several raptor species may nest in the vicinity of the 3.1-mile (4.9 km) portion of Option B that deviates from the proposed Project. As stated above, disturbance that causes nest abandonment and/or loss of reproductive effort is considered a “taking” by the CDFG, and construction activities associated with Option B such as tree removal, site grading, etc., that disturb a nesting raptor on-site or immediately adjacent to the construction zone would constitute a significant impact. However, as with the proposed Project, implementation of Mitigation Measures B-20a (Avoid Nesting Season) and B-20b (Pre-construction Surveys for Nesting Raptors) would reduce significant impacts to less-than-significant levels.

Impact B-21: The Project Could Result in the Electrocution of State and/or Federally Protected Birds (Class III)

Swainson's Hawks and other large aerial perching birds are susceptible to electrocution. Because raptors and other large aerial perching birds often perch on tall structures that offer optimal views of potential prey, the design characteristics of transmission towers/poles are a major factor in raptor electrocutions (APLIC, 1996). Electrocution occurs only when a bird simultaneously contacts two energized phase conductors or an energized conductor and grounded hardware. This happens most frequently when a bird attempts to perch on a transmission tower/pole with insufficient clearance between these elements. Raptor species that utilize the towers for nesting could be electrocuted while landing. Furthermore, nests may be built in areas that are susceptible to electrical charges that may result in fire as well as an electrical outage. Although, the majority of raptor electrocutions are caused by lines that are energized at voltage levels between 1-kV and 69-kV, and "the likelihood of electrocutions occurring at voltages greater than 69-kV is extremely low" (APLIC, 1996), impacts to state and/or federally protected bird species are considered significant. However, SCE will implement APM BIO-9 (Table C.3-6) as part of the proposed project in accordance with the guidance on raptor protection found in *Suggested Practices for Raptor Protection on Power Lines* (APLIC, 1996) and *Avian Protection Plan Guidelines* (APLIC/USFWS, 2005), reducing potential impacts to less-than-significant levels. No further mitigation is required.

Option A

Transmission towers, poles, and other tall structures associated with Option A would be located within the 2.1-mile (3.4 km) portion of Option A that deviates from the proposed Project. Raptor species may perch or nest on these structures, and impacts to state and/or federally protected bird species associated with electrocution are considered significant. However, as with the proposed Project, SCE will implement APM BIO-9 (Table C.3-6) as part of the proposed project in accordance with the guidance on raptor protection found in *Suggested Practices for Raptor Protection on Power Lines* (APLIC, 1996) and *Avian Protection Plan Guidelines* (APLIC/USFWS, 2005), reducing potential impacts to less-than-significant levels. No further mitigation is required.

Option B

Transmission towers, poles, and other tall structures associated with Option B would be located within the 3.1-mile (4.9 km) portion of Option B that deviates from the proposed Project. As stated above, Raptor species may perch or nest on these structures, and impacts to state and/or federally protected bird species associated with electrocution are considered significant. However, the proposed project will incorporate APM BIO-9 (Table C.3-6), thereby reducing potential impacts to less-than-significant levels. No further mitigation is required.

Impact B-22: The Project Could Result in the Mortality of State and/or Federally Protected Bird Species from Collisions with the Transmission Line (Class III)

Bird collisions with power lines generally occur when: (1) a power line or other aerial structure transects a daily flight path used by a concentration of birds, and (2) migrants are traveling at reduced altitudes and encounter tall structures in their path (Brown, 1993). Collision rates generally increase in low light conditions, during inclement weather, such as rain or snow, during strong winds, and during panic flushes when birds are startled by a disturbance or are fleeing from danger. Collisions are more probable near wetlands, valleys that are bisected by power lines, and within narrow passes where power lines run perpendicular to flight paths. Passerines (i.e., songbirds) and waterfowl (i.e., mallard ducks) are known to collide with wires (APLIC,

1994), particularly during nocturnal migrations or poor weather conditions (Avery *et al.*, 1978). However, passerines and waterfowl have a lower potential for collisions than larger birds, such as raptors. Some behavioral factors contribute to a lower collision mortality rate for these birds. Passerines and waterfowl tend to fly under power lines, as opposed to larger species, which generally fly over the lines and risk colliding with the higher static lines, and many smaller birds tend to reduce their flight activity during poor weather conditions (Avery *et al.*, 1978).

It is difficult to predict the magnitude of collision-caused bird mortality without extensive information on bird species and movements in the Project area. These data are not available for the proposed transmission line study area. However, it is generally expected that collision mortality would be greatest where the movements of susceptible species are the greatest (e.g., near wetlands, open water bodies, etc.), such as Little Rock Reservoir, Lake Palmdale, and Fairmont Reservoir. SCE will implement APM BIO-9 (Table C.3-6) as part of the proposed project in accordance with the guidance on raptor protection found in *Suggested Practices for Raptor Protection on Power Lines* (APLIC, 1996) and *Avian Protection Plan Guidelines* (APLIC/USFWS, 2005), reducing potential impacts to less-than-significant levels. No further mitigation is required.

Option A

Transmission towers, poles, and other tall structures associated with Option A would be located within the 2.1-mile (3.4 km) portion of Option A that deviates from the proposed Project. Direct mortality to state and/or federally- protected bird species as a result of collisions with transmission lines would be considered a significant impact. However, as with the proposed Project, SCE will implement APM BIO-9 (Table C.3-6) as part of the proposed project in accordance with the guidance on raptor protection found in *Suggested Practices for Raptor Protection on Power Lines* (APLIC, 1996) and *Avian Protection Plan Guidelines* (APLIC/USFWS, 2005), reducing potential impacts to less-than-significant levels. No further mitigation is required.

Option B

Transmission towers, poles, and other tall structures associated with Option B would be located within the 3.1-mile (4.9 km) portion of Option B that deviates from the proposed Project. Direct mortality to state and/or federally- protected bird species as a result of collisions with transmission lines would be considered a significant impact. However, SCE will implement APM BIO-9 (Table C.3-6) as part of the proposed project in accordance with the guidance on raptor protection found in *Suggested Practices for Raptor Protection on Power Lines* (APLIC, 1996) and *Avian Protection Plan Guidelines* (APLIC/USFWS, 2005), reducing potential impacts to less-than-significant levels. No further mitigation is required.

Impact B-23: The Project Could Result in the Mortality of, and Loss of Habitat for, Tehachapi Pocket Mouse, Southern Grasshopper Mouse, and Tulare Grasshopper Mouse (Class III)

The Tehachapi pocket mouse, Southern grasshopper mouse, and Tulare grasshopper mouse, all state species of special concern, have the potential to occur in the Project area, particularly in the northern-most portion of the proposed Project area. Potential impacts to these species include mortality of individuals during construction activities and loss of habitat due to permanent structures or construction disturbance. The area of suitable habitat for these species potentially impacted by the project would be quite small relative to the overall population size and range of these species. Project implementation would not substantially reduce available habitat, restrict their range, or cause their regional populations to drop below self-sustaining levels. Therefore, impacts to these species as a result of project implementation are less than significant.

Option A

The 2.1-mile (3.4 km) portion of Option A that deviates from the proposed Project traverses non-native grassland habitats suitable for the Tehachapi pocket mouse, Southern grasshopper mouse, and Tulare grasshopper mouse. However, as with the proposed Project, the area of suitable habitat for these species potentially impacted by Option A would be small relative to the overall population size and range of these species. Project implementation would not substantially reduce available habitat, restrict their range, or cause their regional populations to drop below self-sustaining levels. Therefore, impacts to these species as a result of Option A are less than significant.

Option B

The 3.1-mile (4.9 km) portion of Option B that deviates from the proposed Project traverses non-native grassland habitats suitable for the Tehachapi pocket mouse, Southern grasshopper mouse, and Tulare grasshopper mouse. However, as with the proposed Project and Option A above, impacts to these species are less than significant.

Impact B-24: The Project Could Result in the Loss of Habitat for Ringtail (Class III)

Ringtail could potentially occur in the riparian areas of the Project area. However, construction activities in riparian areas would be minimized as stated in the APMs (Table C.3-6). Furthermore, the home range size of the ringtail is very large relative to the area of impact at any given project improvement, so project implementation would not substantially reduce available habitat, restrict their range, or cause their regional populations to drop below self-sustaining levels. Therefore, potential impacts of the project on ringtail are less than significant.

Option A

The 2.1-mile (3.4 km) portion of Option A that deviates from the proposed Project does not traverse any riparian areas suitable for the ringtail. While the Option A alignment is located less than one mile (1.6 km) north of Amargosa Creek, implementation of Option A would not substantially reduce available habitat, restrict their range, or cause their regional populations to drop below self-sustaining levels. Therefore, potential impacts of Option A on ringtail are less than significant.

Option B

The 3.1-mile (4.9 km) portion of Option B that deviates from the proposed Project traverses several small drainages that may support ringtail. However, for the reasons stated above in the proposed Project and Option A, potential impacts of Option A on ringtail are less than significant.

Impact B-25: The Project Could Result in the Mortality of Special-Status Bat Species Due to Electrocution and/or Transmission Line Strikes (Class III)

Special-status and sensitive bat species with the potential to occur in the Project area include pallid bat, Townsend's big-eared bat, western mastiff bat, big free-tailed bat, and western red bat. The primary potential impact on these bat species resulting from project implementation is the direct take of individuals from fatal strikes with transmission lines and towers. Studies quantifying the rate of bird strikes with transmission lines have also documented bat mortalities, particularly in higher-flying species such as red bats (CEC, 1995). The results of these studies have generally documented higher fatality rates in birds. Furthermore, the Project area is not expected to impact any known colonies or maternal roosts. The pallid bat and Townsend's big-eared bat generally fly too low while foraging to be impacted by additional transmission lines, so the number of fatal

strikes for these species is expected to be very low, and thereby not significant. In addition, pallid bats primarily forage on the ground for terrestrial insects such as scorpions and beetles. The western mastiff bat, big free-tailed bat, and western red bat all fly high enough to potentially be impacted by additional transmission lines and towers. However, the number of fatal strikes is still expected to be quite low, and insufficient to substantially reduce the number of these species. Therefore, impacts to special-status bat species resulting from ~~electrocution and/or~~ transmission line strikes are considered less than significant.

Option A

Transmission towers, poles, and other tall structures associated with Option A would be located within the 2.1-mile (3.4 km) portion of Option A that deviates from the proposed Project. These structures may contribute to mortality of pallid bat, Townsend's big-eared bat, western mastiff bat, big free-tailed bat, and western red bat through collisions. However, the number of fatal strikes is still expected to be quite low, and insufficient to substantially reduce the number of these species. Therefore, impacts to special-status bat species resulting from ~~electrocution and/or~~ transmission line strikes are considered less than significant.

Option B

Transmission towers, poles, and other tall structures associated with Option B would be located within the 3.1-mile (4.9 km) portion of Option B that deviates from the proposed Project. However, for the reasons stated in Impact B-25 above, impacts to pallid bat, Townsend's big-eared bat, western mastiff bat, big free-tailed bat, and western red bat due to ~~electrocution and/or~~ transmission line strikes are considered less than significant.

Impact B-26: The Project Could Result in the Loss of Habitat for American Badgers (Class III)

American badger habitat exists throughout the Project area, and CNDDDB records (2006) indicate that this species has been found within, and in the vicinity of, the Project area. The home range of the badger is hundreds of hectares, and therefore is much larger than the area of habitat impacted by the proposed Project. This extremely large home range size would allow any individual badger utilizing the project site to avoid adverse impacts from the associated construction activities or habitat loss. Therefore, project implementation would not substantially reduce available habitat, restrict their range, or cause their regional populations to drop below self-sustaining levels. Therefore, impacts to the American badger are less than significant.

Construction and operation of the transmission line would not result in a barrier for land-bound species like the American badger and would not result in a physical division of territories. However, construction activities including clearing and grading of tower sites could result in impacts to this species. To reduce impacts to this species and other sensitive wildlife, SCE would implement pre-construction surveys for all special-status mammal species with potential to occur within the proposed Project ROW (APM BIO-1). If present, occupied badger dens would be flagged and ground-disturbing activities within 300 feet of the dens would be restricted. Secondary impacts from noise, sensitivity to humans, or dust would be reduced through the implementation of BMPs. If the proposed Project could not avoid removal of an active den, impacts would be significant (**Class II**), but would be reduced to a less-than-significant level with implementation of Mitigation Measure B-26 (Passively Relocate American Badgers During the Non-breeding Season).

Mitigation Measure for Impact B-26

B-26 Passively Relocate American Badgers During the Non-breeding Season. SCE shall survey and identify any badger dens located in the Project area. Occupied dens shall be flagged for avoidance. Un-occupied dens located in the ROW shall be covered to prevent the animal from re-occupying the

den prior to construction. Occupied dens in the ROW shall be hand-excavated if avoidance is not possible. Dens shall only be hand-excavated before or after the breeding season (February-May). Any relocation of badgers shall take place after consultation with the CDFG.

Option A

The 2.1-mile (3.4 km) portion of Option A that deviates from the proposed Project traverses suitable habitat for the badger. Construction activities including clearing and grading of tower sites could result in impacts to this species. As stated above, to reduce impacts to this species SCE would implement pre-construction surveys for all special-status mammal species. If present, occupied badger dens would be flagged and ground-disturbing activities within 300 feet of the dens would be restricted. Secondary impacts from noise, sensitivity to humans, or dust would be reduced through the implementation of BMPs. If the proposed Project could not avoid removal of an active den, impacts would be significant (**Class II**), but would be reduced to a less-than-significant level with implementation of Mitigation Measure B-26 (Passively Relocate American Badgers During the Non-breeding Season).

Option B

The 3.1-mile (4.9 km) portion of Option B that deviates from the proposed Project traverses suitable habitat for the badger. Construction activities including clearing and grading of tower sites could result in significant impacts to this species. As stated above, to reduce impacts to this species SCE would implement pre-construction surveys for all special-status mammal species. If present, occupied badger dens would be flagged and ground-disturbing activities within 300 feet of the dens would be restricted. Secondary impacts from noise, sensitivity to humans, or dust would be reduced through the implementation of BMPs. If the proposed Project could not avoid removal of an active den, impacts would be significant (**Class II**), but would be reduced to a less-than-significant level with implementation of Mitigation Measure B-26 (Passively Relocate American Badgers During the Non-breeding Season).

Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means. (Criterion BIO4)

The Antelope Valley is an internally drained basin with no connection to navigable waters. Therefore, the USACE has chosen to disclaim all drainages and wetland areas within the basin (Pers comm. A. Allen, USACE, Los Angeles District, March 26, 2003). Therefore, no habitats subject to the regulatory jurisdiction of the USACE occur on the project site and no impacts would occur.

Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. (Criterion BIO5)

The proposed Project would not substantially interfere with the movement of any native resident or migratory fish species. Native and migratory fish are limited within the Project area due to the seasonal nature of the creeks and drainages. Furthermore, SCE has indicated that the high voltage lines would span these drainages and disturbance or removal of riparian communities associated with the waterways would not occur. Riparian habitat could be impacted at Amargosa Creek and other drainages if the expansion of the existing access roads is required. Activities that involve modification of the bed or bank of a State jurisdictional waterway would be regulated by the CDFG, Regional Board, and USACE. SCE would implement APM BIO-3, (Obtain a

Streambed Alteration Agreement) that would contain conditions avoiding or minimizing impacts to aquatic species. No further mitigation is required.

Ground-disturbing activity, including tower pad preparation and construction, grading of new access roads, tower removal, and use or improvement of existing access roads would not substantially interfere with movement corridors or impede nursery sites. No permanent impacts would occur to wildlife movement corridors. Construction activities may temporarily limit wildlife movement at tower locations however the broad geographic range and habitat that occurs in many sections of the proposed project area would remain available to wildlife. In addition, large sections of the transmission line ROW located south of the Tehachapi Mountains is located in developing and agricultural communities that does not support large populations of wildlife. Construction activities would interfere with the movement of desert tortoise if present in the project area. (see Impact B-27 below, Disturbance to Desert Tortoise as a result of Habitat Modification). However, the modification of habitat for species other than desert tortoise would consist of relatively small footprints, and alternative movement corridors would remain intact for the majority of wildlife species that may occur in the Project area. Furthermore, to reduce minimal impacts to these species SCE would incorporate APMs BIO-1 (Pre-construction Surveys) and BIO-5 (Conduct Biological Monitoring) into the proposed project.

Impact B-27: The Project Could Result in the Disturbance to Desert Tortoise Movement as a result of Habitat Modification (Class II)

Desert tortoise movement, if present, could be impeded through habitat modification associated with the proposed Project such as road grading and the creation of berms. Exotic weeds can also occur after construction which competes with native flora consumed by desert tortoises. If present, these impacts would result in significant impacts to Desert tortoise. However, implementation of mitigation measures B-27a (Avoid Creating Barriers to Movements) and B-27b (Invasive Weed Prevention) would reduce these impacts to less-than-significant levels.

Mitigation Measures for Impact B-27

B-27a Avoid Creating Barriers to Movements. To avoid creating barriers to desert tortoise movements, within areas designated in the WMP as desert tortoise “Survey Areas,” roadbeds shall not be lowered and berms shall not exceed 12 inches (30 cm) or a slope of 30 degrees.

B-27b Invasive Weed Prevention. Non-native or Invasive plants (*i.e.*, non-native species) shall not be used during any re-seeding or landscaping activities associated with site restoration within areas designated in the WMP as desert tortoise “Survey Areas.”

Option A

The 2.1-mile (3.4 km) portion of Option A that deviates from the proposed Project does not traverse areas of suitable habitat for the desert tortoise. The species has the potential to occur within Joshua tree woodland habitats and creosote bush located in the northern portions of Segment 3. Therefore, project activities associated with Option A (within non-native grassland and desert scrub) would result in no impact to the species.

Option B

The 3.1-mile (4.9 km) portion of Option B that deviates from the proposed Project does not traverse areas of suitable habitat for the desert tortoise. As stated above, the species has the potential to occur within Joshua tree woodland habitats and creosote bush located in the northern portions of Segment 3. Therefore, project

activities associated with Option B (within non-native grassland, desert and juniper scrub, and developed areas) would result in no impact to the desert tortoise.

Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinances. (Criterion BIO6)

The proposed Project would not conflict with and local policies or ordinances protecting biological resources. The project measures within this Chapter are consistent with the General Plan policies and local ordinances protecting biological resources for the cities and counties within the Project area. These plans and policies include the *City of Lancaster General Plan* (City of Lancaster, 1997) and Palmdale Native Desert Vegetation Ordinance described in greater detail in C.3.2.3 above. No impact would occur.

Conflict with the provisions of an adopted Habitat Conservation Plan (HCP), Natural Communities Conservation Plan (NCCP), or other approved local, regional, or state HCP. (Criterion BIO7)

The West Mohave Plan (WMP) is an NCCP/HCP that will assist in developing strategies to conserve and protect the desert tortoise, the Mohave ground squirrel (MGS), and nearly 100 other sensitive plants and animals and the natural communities of which they are part, and will provide a streamlined program for complying with the requirements of the California and federal Endangered Species Acts. The BLM issued a Record of Decision (ROD) based upon the WMP EIR, but the ROD addressed only BLM's amendment of the California Desert Conservation Area (CDCA) Plan and did not include actions being proposed by State and local governments for the non-federal lands, except when specifically identified (BLM, 2006). This habitat conservation plan has not been completed and would require greater specificity for local governments to obtain incidental take permits under the State and federal endangered species acts (BLM, 2006). Therefore, there is not an adopted HCP or NCCP within the Project area and no impact would occur.

C.3.8 Indirect Impacts

Impact B-28: The Project Could Result in the Degradation of Water Quality (Class III)

The proposed Project has the potential to degrade water quality within Amargosa Creek, Oak Creek, the unnamed northern creek, and the desert wash habitat as a result of pollution, sedimentation, and litter stemming from transmission line installation across these riparian areas. These factors would result in significant indirect effects to downstream biological resources.

The project, however, must comply with state and federal water quality regulations, including California's General Construction Storm Water Permit, which requires preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP). SWPPPs are designed to manage storm water quality degradation through best management practices during and after construction. These practices may include temporary drainage ditches, culverts, berms, and/or straw bales that confine storm water and prevent it from carrying sedimentation off of the project footprints.

The Project would require a Streambed Alteration Agreement from CDFG if the project diverts or obstructs the natural flow of; changes the bed, channel, or bank of; or uses material from any creek or desert wash habitat. CDFG Streambed Alteration Agreements contain avoidance and minimization measures addressing work areas and vegetation removal; fill and spoil; structures; clean up; pollution, sedimentation, and litter; restoration and mitigation; removing non-native vegetation; and protective measures for wildlife and aquatic

species. Implementation of APMs BIO-2, BIO-3, and BIO-4 (Table C.3-6), and compliance with the SWPPP would reduce the potential for indirect impacts to biological resources to less-than-significant levels.

Option A

The 2.1-mile (3.4 km) portion of Option A that deviates from the proposed Project does not traverse any water course, and therefore construction activities associated with Option A would not result in significant indirect effects due to degradation of water quality.

Option B

The 3.1-mile (4.9 km) portion of Option B that deviates from the proposed Project ROW does traverse several small drainages. However, implementation of the measures listed in Impact B-28 above would reduce impacts to less-than-significant levels.

Impact B-29: The Project Could Result in the Mortality of Desert Tortoises as a Result of Increased Predation by Common Ravens (Class III)

The proposed Project would increase the number of transmission towers and other structures that provide potential nest sites for common ravens, which are known predators of juvenile desert tortoises. However, increasing the number of towers in this area is not expected to result in an increase in the local breeding population of common ravens. Currently, there are many unoccupied towers, and nesting substrates do not appear to be a limiting factor in the Common Raven's population growth. Therefore, increased predation on the desert tortoise is not expected to result from additional towers, and impacts are expected to be less-than-significant.

Option A

As stated above, the 2.1-mile (3.4 km) portion of Option A that deviates from the proposed Project does not traverse areas of suitable habitat for the desert tortoise. Therefore, Project activities associated with Option A would result in no impact to the species.

Option B

The 3.1-mile (4.9 km) portion of Option B that deviates from the proposed Project does not traverse areas of suitable habitat for the desert tortoise. As stated above, project activities associated with Option B would result in no impact to the desert tortoise.

Figure Links

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